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NON-PROLIFERATION AND ARMS CONTROL: STRATEGIC CHOICES

HEARING

BEFORE THE

COMMITTEE ON FOREIGN RELATIONS UNITED STATES SENATE

ONE HUNDRED EIGHTH CONGRESS

SECOND SESSION

MARCH 10, 2004

Printed for the use of the Committee on Foreign Relations

Available via the World Wide Web: http://www.access.gpo.gov/congress/senate

U.S. GOVERNMENT PRINTING OFFICE
94–204 PDF WASHINGTON : 2004

For sale by the Superintendent of Documents, U.S. Government Printing Office
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NON-PROLIFERATION AND ARMS CONTROL: STRATEGIC CHOICES

WEDNESDAY, MARCH 10, 2004

U.S. SENATE,
COMMITTEE ON FOREIGN RELATIONS,
Washington, DC.

The subcommittee met, pursuant to notice, at 9:35 a.m. in room SD–419, Dirksen Senate Office Building, Hon. Richard G. Lugar (chairman of the committee), presiding.

Present: Senators Lugar, Alexander, Biden, and Bill Nelson.

The CHAIRMAN. Good morning. This hearing of the Foreign Relations Committee is called to order.

Let me announce this good news for the committee. Last week we had the mark-up of the United States-Japan Tax Treaty, as reported out by the committee. It was favorably received on the Senate floor last night.

We would like to thank our Majority Leader, Dr. Frist, for making time for the treaty. It was passed unanimously. This will be good news to many people in the United States, as well as Japanese business and banking communities.

I want to recognize the distinguished Ranking Member, Senator Biden, for his statement.

OPENING STATEMENT OF SENATOR JOSEPH R. BIDEN, JR., RANKING MEMBER

Senator BIDEN. Mr. Chairman, I thank you for the courtesy, and as I said to our witnesses privately, I sincerely apologize for not being able to stay this morning.

There is a totally parochial, but important, event: The president of my alma mater, the University of Delaware, received a prestigious award and, at 9 minutes after 10 o'clock, I am supposed to introduce him downtown. It's an award for an initiative I had begun relating to drugs and alcohol on campuses, and I am obliged to be there.

But when these Three Musketeers, our witnesses, show up on the Hill, it is always for the most important of issues. I truly regret not being able to stay.

And I am going to ask you, Mr. Chairman, if my entire statement could be placed into the record.

The CHAIRMAN. It will be placed into the record in full.

Senator BIDEN. And Mr. Chairman, I think we have to come to grips with the NPT. I think that we have to mend it and not throw

it out. But I think the op-ed piece [1] that these gentlemen wrote back on December 22, 2003, is really, really worth the entire Congress and administration considering and looking at some of the alternatives they've suggested.

I look forward to them continuing to be available to the committee. I know that they have always been available to me and you, individually. And I just wanted to generally thank the three of you. You've made incredible contributions at a moment at which, in my view, if we don't begin to get some of this straight, it will be very difficult to turn around.

It's not like making a mistake, if we make a mistake, on tax policy or social policy. The next Congress will come in and change the law, literally on a dime. This we can't do on nuclear non-proliferation. And so I hope that everyone listens to what you have to say today. I will read with interest your exchange with the chairman.

I will close by saying, at this moment in our history, we are indeed fortunate to have a guy leading the Foreign Relations Committee like Dick Lugar, who, as the old joke goes, forgot more about many of these subjects than a lot of us will ever know.

I thank him for his persistence and his dedication and his knowledge. And again, we're not going to let go of these issues. I appreciate the fact that you have not either.

Thank you very much, Mr. Chairman, and in a moment I am going to have to leave, but I want to hear your opening statement. And again, I apologize and look forward to reading what you have to say, and seeing you all shortly.

[The opening statement of Senator Biden follows:]

OPENING STATEMENT OF SENATOR JOSEPH R. BIDEN, JR.

Thank you, Mr. Chairman. Today's hearing is especially timely, given the events of the past year.

- We discovered a global black market, headquartered in Pakistan, which offered countries all of the essential components for a nuclear weapons program.
- North Korea moved to possibly expand its nuclear arsenal.
- Iran has only partially cooperated with International Atomic Energy Agency efforts to document the full scope of its nuclear program, raising questions regarding its true intentions.
- On the other hand, Libya is voluntarily dismantling its WMD programs, with the assistance of the United States and the United Kingdom.
- And, finally, the United States went to war against Iraq, ostensibly in part to end its nuclear weapons program. But, as David Kay confirmed for all of us, that program was more a mirage than reality.

I am pleased that the committee has before it today an esteemed group of "wise men" to discuss the significance of these events for the future of nuclear arms control and non-proliferation. Bill Perry, Arnie Kanter, and Ash Carter need no introduction. Their December op-ed in the New York Times, co-written with Brent Scowcroft, helped clarify the growing discussion of the Nuclear Nonproliferation Treaty—the NPT. Gentlemen, I welcome you all.

One element of the NPT is a promise to non-nuclear weapons states that, in return for forswearing nuclear weapons, they will enjoy the benefits of peaceful nuclear technology. That bargain has become frayed. Iran, Iraq and North Korea have all used their ostensibly civilian facilities to mask covert weapons programs.

In Iran and North Korea, we were at least able to sound the alarm. Both states had secret efforts to produce weapons-grade plutonium and highly enriched uranium—and were caught. In Iraq, however, absent the gulf war of 1991, Saddam Hussein might have obtained highly enriched uranium without anybody realizing it.

[1] The op-ed piece referred to can be found on page 8.

A smarter state, using a civilian program as the rationale, could build uranium enrichment facilities, spent fuel reprocessing cells, and the like—and properly report these efforts to the IAEA. It could acquire weapons-grade plutonium or highly enriched uranium, and place the material under IAEA safeguards. In other words, it could become a potential nuclear weapons power without violating safeguards. Then it could withdraw from the NPT, and develop and assemble nuclear weapons in a short time.

That's the challenge we need to address. How do we counter not just states that do things in a hamhanded manner, but states that skillfully exploit the loopholes of the NPT? The Additional Protocol that we approved in committee last week can help make it much harder to hide a covert nuclear program—if we can persuade the rest of the world to sign such protocols as well. But how can we combat the "breakout" scenario?

One idea gaining currency is to allow non-nuclear weapons states to continue to possess civilian nuclear programs, but not a closed nuclear fuel cycle. A state could have civilian nuclear reactors to produce electrical power, but must import the nuclear reactor fuel and return any spent fuel. This would ensure that a state did not obtain fissile material needed for a nuclear weapon.

IAEA Director General Mohammed El-Baradei would allow only multinational facilities to produce and process nuclear fuels, and give legitimate end-users assured access to these fuels at reasonable rates. Our witnesses have endorsed this proposal, adding that states that refuse this bargain should be subject to sanctions. President Bush has not endorsed multinational facilities, but called upon members of the Nuclear Suppliers Group to refuse to export enrichment and reprocessing equipment to any state that does not already possess full scale enrichment and reprocessing plants.

I am glad this debate has begun. Any agreement will be difficult to achieve. Non-nuclear weapons states will ask what they will get for surrendering a well established right. States with nuclear fuel industries may worry that they will go out of business if only a few multinational facilities are allowed to operate enrichment and reprocessing activities.

I hope that the international community reaches a consensus in time for next year's NPT Review Conference. I do worry that any effort to formally amend the NPT would open a Pandora's Box. But perhaps we can add a protocol to the NPT, or seek a less formal statement interpreting Article 4 of the NPT.

There is another bargain central to the NPT, one that this administration largely prefers to ignore. In return for forswearing nuclear weapons, non-nuclear weapons states received a commitment from the five permanent nuclear powers, reaffirmed as recently as 2000, to seek eventual nuclear disarmament.

Nobody, including me, expects the United States to give up its nuclear deterrent any time in the foreseeable future. But the administration's drive to research and possibly produce new nuclear weapons—including low-yield nukes—is a step in the wrong direction.

It signals to the rest of the world that even the preeminent global power needs new nuclear weapons to assure its own security.

The administration threatens to take another backward step on a Fissile Material Cutoff Treaty. An FMCT has been a U.S. objective for eight years, and *this* administration castigated other countries for preventing negotiations from starting. Now that there is a chance of success, however, the administration says that *we* may refuse to negotiate. This only undermines solidarity with our allies, who worked for years to help us convince other countries to negotiate.

I want to strongly second a key point made by our witnesses in their recent oped. For all the flaws of the NPT, it is an essential treaty. It has been vital to encouraging states like Ukraine, Belarus, Kazakhstan, South Africa, Brazil and Argentina to end their nuclear weapons programs.

We should also acknowledge the important benefits provided by the IAEA. The IAEA helped crack open many of Iran's nuclear secrets. Just as the U.S. intelligence community is doing incredible work in breaking apart the A.Q. Khan procurement network, the IAEA is doing its part, utilizing information derived from its work on Iran and other nations.

The IAEA needs and deserves our continuing support—both political support and the money, equipment and training that have helped make the IAEA a vital institution in nonproliferation, nuclear safety, and peaceful applications of atomic energy.

Thank you, Mr. Chairman.

OPENING STATEMENT OF SENATOR RICHARD G. LUGAR, CHAIRMAN

The CHAIRMAN. I thank the Senator for his comments, and I appreciate his strong support on the issues that we're going to discuss this morning. It has been consistent and informed, and it has led to a strong bi-partisan view, in our committee, on these critical issues.

Let me begin by simply saying that in my judgment, the No. 1 security threat facing our country is the proliferation of weapons of mass destruction, and their intersection with terrorists groups and rogue states.

Today, our committee meets to consider the United States efforts to respond to this threat through bilateral and multilateral non-proliferation and arms control. I believe that there is much to be done to make existing institutions more effective.

Too often, opponents and proponents of arms control view bilateral and multilateral arms control agreements in absolute terms. Some opponents unjustly dismiss treaties as unverifiable and a threat to United States security, because they believe that parties cannot be stopped from cheating.

Some proponents see arms control agreements almost as ends in themselves, even in cases where poor enforcement mechanisms or shifts in political or technological realities have diminished their usefulness.

Absolutist arguments fail to describe the complexities of the current non-proliferation environment. Treaties and non-proliferation programs can be effective, and can make significant contributions to the United States national security when verified and enforced aggressively. But the international community must commit itself to such a course. Even the most carefully written and intrusive arms control pact will fail if the political will to enforce it is lacking.

Our experiences with the Non-Proliferation Treaty, the NPT, are illustrative of the centrality of effective enforcement. The NPT has contributed greatly to the prevention of new nuclear weapons states. But at the same time, the NPT has been ineffective in stopping determined cheaters, such as Iran, from pursuing a nuclear capability.

Iran's clandestine drive toward a nuclear weapons capability was exposed by an Iranian resistance group and confirmed by the IAEA. Far from the complete cooperation pledged by Iran, inspectors are involved in a complex chess match, where each request for information or access is met with Iranian misdirection, contradiction and sometimes lies. Tehran has been caught red-handed with a weapons program, but continues to obfuscate. In fact, Iran has not even fully abided by the agreement it made in October with Great Britain, France, and Germany. Iran's Foreign Minister hedged on his country's commitment by suggesting that Tehran had agreed "to the suspension, not stopping, of the uranium enrichment process."

The IAEA Board of Governors is locked in a debate as to what to do about Iran. The United States, Canada and Australia continue to push the Board to take real steps to enforce the NPT. Despite the clear evidence that Iran is a determined cheater, concerns

have been raised about the implications of decisive action. Some worry that a Board referral of non-compliance to the United Nations Security Council would push Iran's leadership to abandon the NPT. Even if this were true, keeping Iran in the NPT should not be an end in itself.

Iran claims that it has the right to develop a nuclear fuel cycle to support a domestic nuclear energy program. Many nations, including Iran, point to the NPT's assurance of access to peaceful nuclear technology as one of the principle rationales for their accession. Unfortunately, in the case of Iran, this access to technology has been exploited as a loop-hole that allows states to pursue weapons under the guise of peaceful nuclear power.

Adding to the complexities faced by the international community, the nuclear fuel-cycle itself produces dangerous fissile materials and radiological waste that can be used to construct a dirty bomb. More needs to be done to head off this type of threat.

Last month, in a speech at the National Defense University, President Bush made a number of useful proposals in the area of arms control. With regard to the NPT, the President proposed that the forty members of the Nuclear Suppliers Group should refuse to sell uranium enrichment reprocessing equipment to any state that does already possess full-scale, functioning enrichment or reprocessing plants. Additionally, the President proposed that all states seeking access to civilian nuclear power should sign an additional protocol with the IAEA by next year as a condition of their access to civilian nuclear technology.

With regard to the IAEA, the President proposed two important changes. First, he called on the IAEA Board of Governors to create a special committee on safeguards and verification, to improve the organization's ability to enforce compliance with nuclear non-proliferation obligations. And second, the President urged that no state under investigation for proliferation violations should be allowed to serve on the IAEA Board of Governors or on the new special committee.

The Bush administration also has pursued the Proliferation Security Initiative, or PSI. The sixteen nations that participate in the PSI have had notable successes. The seizure last October of a ship bound for Libya carrying Malaysian-manufactured centrifuge components helped initiate revelations about Pakistani scientists' clandestine nuclear-weapons network and provided further motivation for Libya to disarm.

The PSI provides a flexible, immediate and cooperative approach to weapons proliferation. It can be described as an operational component of non-proliferation. The legal and organizational apparatus associated with traditional arms control or non-proliferation agreements rarely allow for such speed.

Today we welcome truly good friends to the committee. William Perry is a former Secretary of Defense and is currently a professor at Stanford University. Ash Carter is a former Assistant Secretary of Defense for National Security Policy and is currently a professor at Harvard University. Arnold Kanter is a former Under Secretary of State and is currently a principal of the Scowcroft Group.

Our witnesses were joined by former National Security Advisor, Brent Scowcroft, in writing an op-ed in the New York Times last

December that paralleled some of the President's proposals on which Senator Biden has commented so favorably this morning. I am eager to hear their view of President Bush's non-proliferation policy. Furthermore, we would appreciate their insights into what additional steps the United States might take on a bilateral and multilateral basis to reduce the threats posed by the proliferation of weapons of mass destruction.

Gentlemen, it is an honor and a pleasure to have you with the committee this morning.

I would add that Ash Carter, as I have often pointed out publicly, wrote a paper at Harvard, which served as the basis for the bi-partisan breakfast of Senators that preceeded introduction of the Nunn-Lugar legislation. We have always pointed to that paper as a seminal factor in the process of getting our legislation going. We have appreciated all of Ash's additional support through out the years.

Ash and Secretary Perry accompanied Sam Nunn and me on a trip to Russia and the Ukraine in the spring of 1992. They tried to put some flesh into the legislation, and to offer some help to the administration at that time. It was a plane full of talent. These two, who were later to play very important roles in the Department of Defense, were very instrumental in the formation of the Cooperative Threat Reduction legislation. They were there from the beginning.

Arnold Kanter has been a mentor for all of us throughout the years, as well as a spur. Sam Nunn and I went to South Korea very early on in this process, having already visited with Mr. Primakov in Russia, when he was in the intelligence business there. Arnold Kanter's sage advice was very, very important, as we tried to think through where we were headed with this legislation, and with non-proliferation, generally.

I have wonderful memories of all three of you, and I am so pleased that you're here today. I would ask that you proceed in whatever order that you may wish.

But, I would suggest, perhaps, Secretary Perry and then Secretary Carter and then Secretary Kanter. All of your statements will be made part of the record in full.

You may give your full statements or summarize them, but take the time that you need. The purpose of this hearing is to hear you and to have the full benefit of your views.

Secretary Perry.

OPENING STATEMENT OF HON. WILLIAM J. PERRY, MICHAEL AND BARBARA BERBERIAN PROFESSOR, CENTER FOR INTERNATIONAL SECURITY AND COOPERATION, STANFORD UNIVERSITY, STANFORD, CA

Mr. PERRY. Thank you very much, Mr. Chairman.

I will briefly summarize my written statement which is in the record.

The statement is entitled, "A Policy Framework for Countering Weapons of Mass Destruction." In my summary I want to make three points.

The first point is to stress the grave importance of this problem and the utmost priority that should be given to it in United States

National Security policy. It is not alarmism, but called reality. Without vigorous U.S. counter proliferation efforts, a nuclear weapon could explode on U.S. soil sometime in the coming years. That is the event that we should be focused on.

The second point I want to make is that there is no silver bullet or policy to stop proliferation of weapons of mass destruction. It requires a comprehensive program and succeeding speakers will talk in some detail of what the elements of that program is.

The third point I want to make is that like the war on terrorism, the war on weapons of mass destruction requires strong U.S. leadership, but, and this is an important but, it cannot be accomplished by U.S. action alone. It does require fundamentally an international effort.

Now beyond my statement, I want to close with a purely personal remark. And in this, I want to quote Andrei Sakharov, the great Russian physicist, who during the height of the cold war wrote, "reducing the risk of annihilating humanity with nuclear weapons must be the overriding consideration over all other priorities." And so it was during the cold war and so it should be today.

Today, we risk not annihilating civilization, what we risk is a nuclear bomb being detonated in an American city. And this could transform civilization in ways that would be very terrible.

Today, we do have programs designed to prevent the proliferation of nuclear weapons, but my concern and my deep concern is that these programs are not being treated as priority programs.

You will hear from Dr. Carter and Dr. Kanter, specific recommendations on actions we should be taking to protect our country by dramatically strengthening these programs. We should be pursuing these recommended programs. As Andrei Sakharov has said, with an overriding priority overall other considerations.

If we do not, if we allow a terrorist to detonate a nuclear bomb in Washington, DC, New York, or San Francisco, we will forever after be asking ourselves why we didn't take the actions necessary to prevent that catastrophe.

Thank you very much, Mr. Chairman.

[The prepared statement of Secretary Perry and Brent Scowcroft follows:]

PREPARED STATEMENT OF HON. WILLIAM J. PERRY AND BRENT SCOWCROFT

A POLICY FRAMEWORK FOR COUNTERING WEAPONS OF MASS DESTRUCTION

Mr. Chairman and Members of the Committee, thank you for inviting me and my good friend Brent Scowcroft to kick off this hearing on Nonproliferation and Arms Control: Strategic Choices. Brent could not be here today, but he asked me to make this brief opening statement on behalf of both of us.

First of all, Brent and I commend the Committee for addressing itself to this topic, which is the most important security imperative of our era and which President Bush has succinctly posed as the need to "keep the worst weapons out of the hands of the worst people."

Brent and I have long worked together on issues involving WMD. Initially our concern was, of course, the nuclear arsenals of the cold war superpowers and their potential to unleash destruction on a scale that would almost literally have wiped out civilization. I was a member of the Scowcroft Commission during the Reagan administration that assessed the options for maintaining a nuclear deterrent to Soviet attack that was strong and, at the same time, survivable and stabilizing.

For a time Brent and I co-chaired the bipartisan Aspen Strategy Group, which has counted among its members over the years many important thinkers about U.S. national security, including Vice Presidents Cheney and Gore, National Security Ad-

visor Condi Rice, and you yourself, Mr. Chairman, as well as Senators Hagel and Brownback of this Committee, and Senators Reed and Hutchison. This past summer the four of us making statements before you today—Brent and myself, Ash Carter, and Arnie Kanter, all members of the Aspen Strategy Group—were reflecting on how the WMD problem has changed from the cold war days. Out of that discussion came our proposal, detailed in the New York Times op-ed attached to my statement, to strengthen the Nuclear Non-proliferation Treaty regime to deal better with such serious problems as the Iranian nuclear program. A national and indeed international debate on this proposal, and what we hope would be swift adoption of it in some form, is an example of the kind of policy response to the WMD threat that the series of hearings being launched today can catalyze. I was pleased that President Bush included this concept in his recent speech at National Defense University.

Mr. Chairman, I would like to make two principal points on our behalf in opening this hearing.

The first is to stress the grave importance of this problem and the utmost priority that should be given to it in U.S. national security policy. It is not alarmism but cold reality that without vigorous U.S. counterproliferation efforts a nuclear weapon might explode on U.S. soil sometime in coming years. Such an event—or even an ever-present knowledge that nuclear weapons were "loose" in the hands of terrorists—would transform the way we live. Who would wish to live or work within the concentric rings of progressive destruction around this Capitol if we came to believe that a nuclear detonation here was possible any minute? Yet we could face this knowledge in the future if only a fraction of the fissile material already made, let alone that which may be in the making in such places at North Korea, fell into the hands of the many who would use it—without warning, without remorse, and without fear of retaliation. America's national security leaders owe our people freedom from this fear, above all else.

Second, there is no silver bullet of policy to stop proliferation of WMD—neither preemption, nor arms control, nor export controls, nor diplomacy, nor missile defense, nor deterrence, nor any other single tool. The point so often missed in debate over this central security problem is that we need, in one way or another, all of these approaches. The problems of WMD spread to state and non-state actors are different in different places, and the variety of the problems must be matched with a variety of approaches. The magnitude of the problem requires that we leave *no option out* of our consideration. We need to be strengthening *each and every one* of our counterproliferation tools. Some of our approaches date back decades and, like the NPT example I gave above, are in need of fundamental overhaul.

Mr. Chairman and Members of the Committee, we need a war on WMD as vigorous as the war on terrorism. Like the war on terrorism, the war on WMD requires strong U.S. leadership but cannot be accomplished by U.S. action alone. The Committee's effort to frame the agenda for a comprehensive, stronger, and global approach to protecting the U.S. from WMD is exactly what is needed at this time, and Brent Scowcroft and I are pleased to share today in your effort.

[Attachment.]

[From The New York Times, Monday, December 22, 2003]

GOOD NUKES, BAD NUKES

(By Ashton B. Carter, Arnold Kanter, William J. Perry and Brent Scowcroft)

The Nuclear Nonproliferation Treaty is arguably the most popular treaty in history: except for five states, every nation in the world is part of it. For more than three decades, it has helped curb the spread of nuclear weapons.

Since 9/11, however, and especially in the last several months, the viability of the treaty has been called into question. Some say it is obsolete. Others say it is merely ineffective. In support of its argument each side cites the situation in Iran, which has been able to advance a nuclear weapons program despite being a member of the treaty.

The Iranian nuclear program—and, to a lesser extent, the activities of Libya, which has also signed the treaty but announced last week it would give up all illegal weapons programs—highlight both the utility and the limitations of the treaty. It is not obsolete; if the treaty did not exist, we almost certainly would want to invent it. At the same time, it would be a mistake to rely on it exclusively to address the problem of nuclear proliferation.

Those who say the treaty is useless argue that the bad guys either don't sign the treaty, or they do and then cheat. The good guys sign and obey, but the treaty is irrelevant for these countries because they have no intention of becoming nuclear proliferators in the first place.

This all-or-nothing argument is wrong. First, it fails to acknowledge that there is an important category in between good guys and bad guys. For these in-betweens—countries like Ukraine, Kazakhstan, South Africa, Argentina or South Korea—the weight of international opinion against proliferation expressed in the treaty has contributed to tipping the balance of decision-making against having nuclear weapons.

Second, the treaty does have an impact even on "bad guys" like Iraq, Iran and North Korea. When the United States moves against such regimes, it does so with the support of the global opprobrium for nuclear weapons that the treaty enshrines.

This consensus undergirds the multilateral approach that is under way to resolve the North Korean nuclear issue, and was at the heart of the international pressure that persuaded Tehran to increase the transparency of its nuclear program. Even in the divisive case of Iraq, no one argued that Saddam Hussein should be left alone with weapons of mass destruction.

Yet the treaty is not perfect. It allows, for example, nations that forswear nuclear weapons to develop nuclear power for peaceful purposes. Signatories may build and operate nuclear power reactors, and they are permitted to produce enriched uranium that fuels the reactors, to store the radioactive spent fuel from those reactors, and to reprocess that spent fuel. The only specific obligations are that signatories declare these plants to the International Atomic Energy Agency and permit the agency to inspect them.

The problem is that this "closed fuel cycle" gives these countries the inherent capacity to produce the fissile material required for a nuclear weapon. Facilities used to produce enriched uranium for power reactors can also be used to produce enriched uranium for weapons. Reprocessing spent fuel yields plutonium that can be fashioned into nuclear weapons.

As North Korea and Iran demonstrate, regimes that intend to violate the treaty's ban on nuclear weapons can exploit this right to operate a nuclear power plant. While seeming to remain within the terms of the treaty, they can gather all the resources necessary to make nuclear weapons. Then they can abrogate the treaty and proceed to build a nuclear arsenal.

The world should renew its determination to curb the spread of nuclear weapons by supplementing the current treaty with additional inducements and penalties. The key is to draw a distinction between the right to a peaceful civilian nuclear power program and the right to operate a closed fuel cycle. The first should be preserved—and perhaps enhanced—but the second should be seriously discouraged, if not prohibited.

How might such a system work? In addition to their treaty obligations, those countries seeking to develop nuclear power to generate electricity would agree not to manufacture, store or reprocess nuclear fuel. They also would agree to submit to inspections (probably under the atomic energy agency) to verify their compliance.

Those countries that now sell peaceful nuclear technology in accordance with the treaty, meanwhile, would agree not to provide technology, equipment or fuel for nuclear reactors and related facilities to any country that will not renounce its right to enrich and reprocess nuclear fuel, and agree not to sell or transfer any equipment or technology designed for the enrichment or reprocessing of nuclear fuel. At the same time, these countries would agree to guarantee the reliable supply of nuclear fuel, and retrieval of spent fuel at competitive prices, to those countries that do agree to this new arrangement.

We might also consider sanctions on those countries that nevertheless choose to pursue a closed fuel cycle. Whatever the precise content and form of these undertakings, it would probably be better to treat them as a companion to that treaty, rather than embark on the complicated and controversial process of amending it.

Why would any countries that want to develop a peaceful nuclear power program agree to such a bargain? One blunt answer is that if these restrictions were put in place, these countries would have virtually no choice, because developing the necessary technology from scratch is a daunting task. Refusing the arrangement would open them up to international scrutiny and pressure. On the other hand, any country that was truly interested in developing nuclear power for peaceful purposes would undoubtedly welcome a guaranteed supply of nuclear fuel.

And why would countries that now supply nuclear technology be interested? First, no nation in this category has any interest in adding any country to the roster of the world's nuclear states. Second, over time, there probably is more money to be made in nuclear fuel services than in nuclear reactors.

Iran provides an excellent opportunity to test this approach. Building on the progress recently announced in Tehran, the United States should propose that Russian plans to help Iran build a network of civilian nuclear power reactors be permitted to proceed—provided that Iran enters into a verifiable ban on its enrichment and reprocessing abilities, and into an agreement to depend instead on a Russian-led suppliers' consortium for nuclear fuel services.

The Russians would be likely to embrace such a proposal for commercial and political reasons, and the Iranians would be confronted with a clear test of whether they harbor nuclear weapons ambitions. Britain, France and Germany, whose foreign ministers recently proposed a similar scheme to Iran, would need only to avoid the temptation to undercut the Russians on behalf of their own nuclear industry. And the United States could reap the benefits of offering a constructive initiative to address the Iranian nuclear problem.

Of course, this new arrangement would hardly be a cure-all. And making it work would be difficult. But at a time when its effectiveness and relevance are being questioned, such an approach would strengthen the treaty by furthering its goals: preventing the spread of nuclear weapons while promoting the development of peaceful nuclear energy.

The CHAIRMAN. Thank you very much, Secretary Perry.

Secretary Carter.

OPENING STATEMENT OF HON. ASHTON B. CARTER, CO-DIRECTOR, PREVENTIVE DEFENSE PROJECT, JOHN F. KENNEDY SCHOOL OF GOVERNMENT, HARVARD UNIVERSITY, CAMBRIDGE, MA

Mr. CARTER. Thank you, Mr. Chairman.

Thank you for inviting me to be here today. And thank you very much for your kind remarks in the introduction.

The last time I testified before this committee, the topic was the North Korean nuclear crisis.

In their joint statement, Secretary Perry and General Scowcroft indicated that they had been working together with Arnie Kanter, also at the table, and me recently, on ideas on how to stop Iran's nuclear program.

And of course, most of this last year all of us have had our attention riveted on the war to stop Iraq's weapons of mass destruction.

But you, today, Mr. Chairman, ask us to step back a bit and to look not at today's hot spots, but beyond those hot spots to the underlying policies and programs of the United States for counter proliferation. And it is those that I would like to address.

And it's a particular interest of mine because I was involved in launching the Pentagon's Counter Proliferation Initiative almost 10 years ago. There were very few hawks on this subject at that time.

The way you framed this hearing, Mr. Chairman, is a reminder that although in dealing with the rogues is vitally important, it is not the totality of the counter proliferation approach and policy we need. A clear indication that our approach to countering proliferation should not begin and end with the rogues, is that most of the nearly 200 nations on earth most have not, in fact, resorted to weapons of mass destruction. There are few rogues fortunately.

In one of Arthur Conan Doyle's famous novels, Sherlock Holmes sees a vital clue to a murder in the fact that a dog at the scene of the crime did not bark. In a similar way, we should see a clue to one aspect of a successful counter proliferation policy in the fact that such countries as Germany, Japan, Turkey, South Korea and Taiwan have not resorted to weapons of mass destruction.

They have not because they were dissuaded from doing so by a stable reliance relationship with the United States which offered better security for them than weapons of mass destruction. This is something the United States has been doing right and should keep doing right.

Later I will return to this point because I have some concerns about the health of our alliances and partnerships.

Other nations have foregone weapons of mass destruction as part of a disarmament agreement like the Nuclear Non-Proliferation Treaty that ensures them that if they forego weapons of mass destruction, their neighbors will forego weapons of mass destruction. If disarmament regimes can be strengthened and updated so that they offer credible protection, and Arnie Kanter will indicate later how this might be done for the NPT, they too can play a vital role in counter proliferation.

Now when dissuasion and disarmament fail and a nation heads down the road to weapons of mass destruction acquisition nonetheless, focused diplomacy by the United States can sometime reverse its course. Recent decades give many examples of successful U.S. diplomacy: Ukraine, Kazakhstan, and Belarus after the collapse of the Soviet Union; South Korea and Taiwan in the 1980s; Argentina and Brazil in the 1990s; perhaps Libya in recent years.

Some proliferators cannot be turned back by diplomacy. And at that point our approach must be to deny them the means to make weapons of mass destruction. Keeping the worst weapons out of the hands of the worst people, to paraphrase President Bush. Export controls, covert action, the new Proliferation Security Initiative, and the highly successful Nunn-Lugar program all contribute to the strategy of denial.

Finally, sometimes dissuasion, disarmament, diplomacy, and denial don't work, and despite our best efforts proliferation occurs. It was important to me during the time I served in the Defense Department that U.S. efforts to counter weapons of mass destruction not end when non-proliferation had failed, and this is one reason we coined the word counter proliferation. At the point when non-proliferation fails we need to offer protection to our forces, people, and allies against weapons of mass destruction.

Elimination of hair-trigger alert postures, improved permissive action link type technology, and other defusing measures can reduce the chances of accidental or unauthorized use of weapons of mass destruction where they occur—from Russia for example, or between India and Pakistan. With respect of deliberate use of weapons of mass destruction after proliferation has occurred, the United States should continue, in my judgment, its current policy of threatening overwhelming and devastating retaliation against anyone who uses nuclear, chemical, or biological weapons against us, since in at least some cases deterrence might be effective.

Where deterrence fails, defenses ranging from chemical suits, inhalation masks, and vaccines to ballistic missile defense are needed.

And finally, where all of that fails and the risk of weapons of mass destruction use is imminent, preemptive destruction of hostile weapons of mass destruction might be a necessary last resort.

So, Mr. Chairman, dissuasion, disarmament, diplomacy, denial, defusing, deterrence, defenses, destruction, what the Department of Defense calls the eight "Ds," are the tools of a comprehensive counter proliferation policy. And besides being an easy jog to the memory, the eight Ds are a reminder that there is no silver bullet for counter proliferation. Not preemption, not arms control, not any other single tool.

From listening to the public debate one might come to believe that one of these tools holds the key to protection against proliferation. But the dynamics driving proliferation in different countries are different enough that no single label or doctrine can cover them all. One might also infer from the public debate that the eight Ds are competing, alternative doctrines. In fact, we need them all.

So today, a counter proliferation hawk should be trying to strengthen all the eight Ds, all the tools in the toolbox. And many of them are in need of fundamental overhaul. One reason for that is that we have not yet heeded a lesson of the attacks of 9/11, the counter proliferation and counter terrorism are inseparable in the 21st century.

As I indicated when I appeared before you to discuss the North Korea nuclear crisis, we must be concerned not only about what Kim Jong Il might do with the nuclear weapons he obtains from the plutonium he is reprocessing, but also about the other hands into which North Korea's nukes might someday fall, either through sale or in the chaos of a collapse of the North Korean regime.

The half life of plutonium 239 is 24,400 years. Surely the North Korean regime will not last that long. Today's proliferation threat is therefore tomorrow's catastrophic terrorism threat. Who among us would not give a great deal now to return to the 1980s and stop the Pakistani nuclear program, which might be Talibanized sometime in the future. A real nightmare scenario?

And 9/11 should have caused us to overhaul our approach to counter proliferation as fundamentally as our approach to counter terrorism. But so far the worst people have gotten more attention than the worst weapons.

The counter proliferation hawk's agenda would have six priorities which together cover all the eight Ds. And in the remainder of my time I would like to sketch out what in each of those six categories should be done.

The first is to strengthen our alliances and partnerships. I indicated earlier that the prospect of being embedded in a stable security relationship has been critical in preventing many countries from proliferating. This under appreciated benefit of our security partnerships is yet another reason to avoid the temptation to make a virtue of an Iraq war necessity, the so-called coalition of the willing.

For this and for several other reasons I won't take the time to describe, but are in my statement, we should reject the notion that the United States can operate effectively through coalitions of the willing. And use the concept only as the last resort when we have had no success in leading our allies in our direction.

Second, expand the scope of Nunn-Lugar. Nunn-Lugar is recognized to be not only a Department of Defense program focusing on the Soviet Union, Mr. Chairman, the way it began a dozen years

ago, but an entirely new and novel and broad-ranging approach to eliminating weapons of mass destruction. An approach of wide applicability.

At the time the United States formed a coalition against al-Qaeda after 9/11, it should have formed a parallel coalition against weapons of mass destruction based on the Nunn-Lugar approach. In fact, such a coalition against weapons of mass destruction terrorism was proposed at the time by none other than Senators Nunn and Lugar. The United States missed a major opportunity to transform counter proliferation while it had the attention and sympathies of the world.

Still it is not too late to expand the scale and scope of Nunn-Lugar. The expansion would plan for and fund: First, the final and complete safeguarding of all Soviet Union fissile materials in weapons and non-weapon form.

Second, bolder inroads into former Soviet biological and chemical stockpiles and facilities.

Third, collection of all significant caches of highly enriched uranium worldwide, eliminating these sleeper cells of nuclear terrorism.

Fourth, complete and verifiable elimination of weapons of mass destruction programs in Iraq, Libya, Iran and North Korean when and as circumstances permit.

Promulgation and adoption of world-class standards for inventory control, safety and security for all weapons and weapons usable materials.

Strengthening border and export controls and devising cooperative international responses in the event of an incident of nuclear terrorism.

As you have noted yourself, Mr. Chairman, Nunn-Lugar is much praised but little funded in Washington, DC and other capitals. Here in Washington, there are tenacious opponents in Congress and even in the administration, despite the fact that President Bush has voiced his support for the program.

Third, update and upgrade the Nuclear Non-Proliferation Treaty. The NPT is sometimes disparaged because it said the bad guys can ignore it with impunity since it has inadequate verification and enforcement provisions. And the good guys would be good with or without an agreement.

This contention is wrong for two reasons. First, the world does not divide neatly into good guys and bad guys in regard to proliferation behavior. There's an important in between category. This group has been represented over time by the ones I named before: Ukraine, Kazakhstan, Belarus, Argentina, Brazil, Taiwan, South Korea and South Africa. And in all of these cases, the allure of greater international acceptance, if they abandoned their nuclear ambitions and signed the NPT, was one of the factors in their decision.

Second reason it is wrong, is that it is important to note that agreements like the NPT are in fact useful even in dealing with the bad guys, in an indirect way. When it becomes necessary for the United States to lead action against the rogues, we do so with the support of the general opprobrium for nuclear weapons that the NPT enshrines.

While the NPT has great value in its current form, therefore its provisions can and should be strengthened. Bill Perry has mentioned this problem in his joint statement with Brent Scowcroft, and Arnie Kanter will cover it in more detail.

A fourth, we should make it a part of the Pentagon's transformation. In the 1990s, the term "counter proliferation" was coined as I mentioned earlier, to signify that contending with weapons of mass destruction was an important Department of Defense mission in the post cold war world.

And a number of counter proliferation programs were created within the Department of Defense at that time to try to focus research, development and acquisition on non-nuclear counters to weapons of mass destruction on the battlefield because the President deserves better options than firing U.S. nuclear weapons if someone uses weapons of mass destruction against us.

Over time, that kind of proliferation programs were expanded to protect rear areas and ports and airfields in the theater of war, and subsequently technologies for protecting allied rear areas were recognized to be applicable to the protection of the U.S. homeland as well.

So by 9/11, the Department of Defense was recognized as the lead agency in the Federal Government for developing and fielding technology for countering weapons of mass destruction. Chemical and biological warning sensors, improved vaccines against biological-attack, individual and collective protective coverings, special munitions for attacking and neutralizing enemy weapons of mass destruction, radio chemical forensics, and active defenses such as ballistic missile defenses. All of those things.

Today, the Pentagon is quite rightly devoting a portion of its growing budget to transforming the military. But the core of that effort remains conventional warfare: Long range precision strike, close integration of intelligence information with operations, Closer working of Army, Navy and Air Force units in joint operations.

These are all worthy transformation goals for conventional warfare, but they need to be matched, and they are not matched at this time, by any comparable counter-weapons of mass destruction emphasis. Counter proliferation needs more resources and a clearer management structure within the Department of Defense.

Fifth, the same observation that I just made about defense transformation could be made about the priority given to weapons of mass destruction in the new Homeland Security agencies and budget.

If the worst kind of terrorism imaginable is weapons of mass destruction terrorism, why is so small a fraction of the new Homeland Security program devoted to innovative efforts to prevent and respond to weapons of mass destruction terrorism?

Last and sixth, overhaul weapons of mass destruction intelligence and avoid the specter of policymaking in the dark. No policy tool, preemption, disarmament, missile defense, denial can be effective if the existence and nature of weapons of mass destruction efforts is unknown or imprecise.

And Secretary of Defense Rumsfeld became convinced in the course of his work on ballistic missile proliferation before he took office, that adequate intelligence on weapons of mass destruction

programs or at least ballistic missile programs, was unlikely to be present. Given the stakes, he concluded, the United States must assume the worst in formulating its policy response. This logic, encapsulated in the maxim "absence of evidence of weapons of mass destruction is not evidence of absence," was the main intellectual argument in the Rumsfeld report leading to the deployment of a National Missile Defense.

The argument was that we would not know the exact timetable for the deployment of an Iranian or North Korean ballistic missile threat, and therefore it was imprudent merely to prepare to deploy in anticipation of the emergence of that threat. Instead it was necessary to deploy immediately.

I myself applied that same logic to the need for a preemptive war in Iraq. I along with many others believed it was safer to assume Saddam Hussein was trying to fulfill his long-demonstrated quest for weapons of mass destruction than to interpret the scanty intelligence available as evidence of a scanty program. I still believe that my judgment to support the invasion of Iraq was sound on the basis of the information available at the time. But we now know that the overall picture of that information painted was incorrect.

The matter of pre-war intelligence on Iraq's weapons of mass destruction is a subject of several ongoing inquiries, and my purpose in raising it is not to anticipate their results but to point to the larger issue of how to improve weapons of mass destruction intelligence in general and get out of the worst case mode where we can.

Weapons of mass destruction activities are inherently difficult to monitor, and therefore a profound question bearing upon all of the eight Ds, is whether adequate intelligence is likely to be available to make any of them effective. If not the world is doomed to a perpetual situation reminiscent of the "missile gap" of the 1950s, where policymaking was forced into worst case scenario mode.

The uncertainties of the 1950s missile gap were substantially dispelled by the invention of satellite reconnaissance. And in this field of counter proliferation also technology can make a substantial difference. I won't take the time to detail that, but it is detailed in an article which I have attached to my written statement that will be published shortly in Technology in Society.

Technology is important, but no technology in the offing holds the promise of lifting the veil of weapons of mass destruction activities completely the way satellite photography lifted the veil of the Soviet Union's nuclear missile and bomber programs. So accurate intelligence on weapons of mass destruction needs to be enhanced by some additional ingredients. There are matters of policy and management.

One ingredient is active transparency by the parties under surveillance. Governments around the world will have to allow greater access to their territory, facilities, and scientists if there is to be any kind of accurate underpinning of counter proliferation.

The second ingredient must be the shifting of the burden of proof from the international community to the party under suspicion.

Third, since proliferation is essentially a scientific activity, we also need to increase the number and level of technical training of the scientists and engineers in the intelligence community, as well

as the linkages between the intelligence community and the broader scientific community.

And fourth, very importantly, a great spur of quality and motivation of an intelligence effort is a clear link to action. Since 9/11, as you know, the counter terrorism intelligence effort has become more actionable. To simplify somewhat, the counter terrorism effort has moved from producing papers characterizing terrorists groups to supporting operations to interdict terrorists.

As the counter proliferation efforts gets more operational, as I hope it does, through covert action, the PSI, expanded Nunn-Lugar, and verifying weapons of mass destruction elimination in Iraq, Libya, and hopefully elsewhere, the demand for actionable intelligence will increase. And if history is any guide, the intensity and quality of collection and analysis by the intelligence community will increase in response.

Taken together and with urgency, these five steps I have named leave me, if we take them, optimistic that such an overhaul of our weapons of mass destruction related intelligence effort can provide accurate intelligence to undergird all of the eight Ds.

Well, Mr. Chairman and members of the committee, let me close by repeating something Dr. Perry said, which is, "the war on terrorism and the war on proliferation are strongly linked in the 21st century." But they are not identical. So far we're waging the war on terrorism much more vigorously than we're waging the war on weapons of mass destruction, attacking the worst people much more than the worst weapons.

I hope this series of hearings results in an overhaul of counter proliferation that is as far reaching as the overhaul of counter terrorism that began on 9/11. And that the measures I have recommended provide an agenda for action.

Thank you.

[The prepared statement of Secretary Carter follows:]

PREPARED STATEMENT OF HON. ASHTON B. CARTER

OVERHAULING COUNTERPROLIFERATION

Mr. Chairman and Members of the Committee on Foreign Relations, thank you for inviting me to appear before you today. Last time I testified before you, the topic was the North Korean nuclear crisis. Bill Perry and Brent Scowcroft indicated that we had been working together with Arnie Kanter recently on how to stop Iran's nuclear program. And, of course, much of the attention of all of us over the past year has been on the war to stop Iraq's weapons of mass destruction programs.

Today you have asked me to step back a bit and look beyond today's proliferation hotspots to the underlying policies and programs of the United States for counterproliferation (CP). I was deeply involved in launching the Pentagon's CP Initiative almost ten years ago, when there were few of us hawks on this subject. The way you have framed this hearing is a reminder that dealing with the so-called "rogues," though vitally important, is not the totality of the CP policy we need.

No Silver Bullets: A Comprehensive Approach to Counterproliferation

A clear indication that our approach to countering proliferation should not begin and end with the rogues is that most of the nearly 200 nations on earth have not, in fact, resorted to weapons of mass destruction (WMD). There are but a few rogues, fortunately. In one of Arthur Conan Doyle's famous novels, Sherlock Holmes sees a vital clue in the fact that a dog at the scene of the crime did *not* bark. In a similar way, we should see a clue to one aspect of a successful CP policy in the fact that such countries as Germany, Japan, Turkey, South Korea, and Taiwan have *not* resorted to WMD. They have not because they were *dissuaded* from doing so by a stable alliance relationship with the United States that offered better security for them than WMD. This is something the United States has been doing right and should

keep doing right; later I will return to this point, because I have some concerns about the health of our alliances and partnerships.

Other nations have foregone WMD as part of a *disarmament* agreement like the Nuclear Nonproliferation Treaty that ensures them that if they forego WMD, their neighbors will also. If disarmament regimes can be strengthened and updated so they offer credible protection—Arnie Kanter will indicate later how this might be done for the NPT—they too can play a vital role in CP.

When dissuasion and disarmament fail and a nation heads down the road to WMD acquisition, focused *diplomacy* by the United States can sometime reverse its course. Recent decades give many examples: Ukraine, Kazakhstan, and Belarus after the collapse of the Soviet Union; South Korea and Taiwan in the 1980s; Argentina and Brazil in the 1990s; perhaps Libya in recent years.

Some proliferators cannot be turned back. At that point our approach must be to deny them the means to make WMD: keeping the worst weapons out of the hands of the worst people, to paraphrase President Bush. Export controls, covert action, the new Proliferation Security Initiative (PSI), and the highly successful Nunn-Lugar program all contribute to the strategy of *denial.*

Sometimes dissuasion, disarmament, diplomacy, and denial don't work, and despite our best efforts proliferation occurs. It was important to me during the time I served in the Defense Department that U.S. efforts to counter WMD not end when nonproliferation had failed, and that is one reason we coined the word "counterproliferation". At that point we need to offer protection to our forces, people, and allies against use of WMD. Elimination of hair-trigger alert postures, improved permissive action link (PAL) type technology, and other *defusing* measures can reduce the chances of accidental or unauthorized use of WMD—from Russia, for example, or between India and Pakistan. With respect to deliberate use, the United States should continue its current policy of threatening "overwhelming and devastating" retaliation against anyone who uses nuclear, chemical, or biological weapons against us, since in at least some cases *deterrence* might be effective. Where deterrence fails, defenses—ranging from chemical suits, inhalation masks, and vaccines to ballistic missile defense (BMD)—are needed. Finally, where the risk of use of WMD is imminent, preemptive *destruction* of hostile WMD might be a necessary last resort.

Mr. Chairman and Members of the Committee: dissuasion, disarmament, diplomacy, denial, defusing, deterrence, defenses, destruction—what the Department of Defense calls the "8 D's," are the tools of a comprehensive counterproliferation policy. Besides being an easy jog to the memory, the 8 D's are a reminder that there is no silver bullet for counterproliferation—not preemption (destruction), not arms control (disarmament), nor any other single tool. From listening to the public debate one might come to believe that one of these tools holds the key to protection against proliferation. But the dynamics driving proliferation in different countries are different enough that no single label or doctrine can cover them all. One might also infer from the public debate that the 8 D's are competing, alternative "doctrines." In fact we need them all.

Ingredients of a Needed Overhaul of Counterproliferation

Today a CP "hawk" should be trying to strengthen all tools in the toolbox. Many of them are in need of fundamental overhaul. One problem is that some date to the Cold War, when counterproliferation was a "B list" problem compared to the "A list" confrontation with the Soviet Union. Another problem is that we have not heeded a lesson of the attacks of 9/11: counterproliferation and counterterrorism are inseparable in the 21st century. As I indicated when I appeared before you to discuss the North Korean nuclear crisis, we must be concerned not only about what Kim Jong Il might do with nuclear weapons he obtains from the plutonium he is reprocessing, but also about the other hands into which North Korea's nukes might some day fall—either through sale or in the chaos of a collapse of the North Korean regime. The half-life of plutonium 239 is 24,400 years; surely the North Korean regime will not last that long. Today's proliferation threat is tomorrow's catastrophic terrorism threat. Who among us would not give a great deal now to return to the 1980s and stop the Pakistani nuclear program, which might be "talibanized" sometime in the future, in a nightmare scenario? 9/11 should have caused us to overhaul our approach to counterproliferation as fundamentally as our approach to counterterrorism. But so far the "worst people" have gotten more attention than the "worst weapons."

The counterproliferation hawk's agenda would have six priorities, which together cover all of the "8 D's."

1. *Strengthen alliances and partnerships.* I indicated earlier that the prospect of being embedded in a stable security relationship with the United States has been

critical to preventing proliferation in such countries as South Korea, Turkey, Taiwan, and Ukraine. This underappreciated benefit of America's security partnerships is another reason to avoid the temptation to make a virtue of an Iraq war necessity, the so-called "coalition of the willing." Compared to standing partnerships and alliances, such coalitions do not serve U.S. interests well. Alliance partners train together to interoperate, so when they go to war they are not only *willing* but *able* to make a contribution to combined operations. Alliance partners routinely exchange threat assessments, making them more likely—not certain, to be sure, but more likely—to share our view when we believe use of force is necessary. And finally, alliance partners stably tied to the U.S. for their defense are unlikely to adopt a drastic, purely national approach to their defense like acquisition of WMD. For all these reasons, we should reject the notion that the United States can operate effectively through "coalitions of the willing" and use that concept only as a last resort when we have no success in leading our allies in our direction.

2. *Expand the scale and scope of Nunn-Lugar.* Nunn-Lugar is now recognized to be not just a DOD program focused on the former Soviet Union, the way it began a dozen years ago, but a novel approach to eliminating WMD of wide applicability. At the time the United States formed a coalition against al Qaeda after 9/11, it should have formed a parallel coalition against WMD based on the Nunn-Lugar approach. In fact, such a Coalition Against WMD Terrorism was proposed at the time by none other than Senators Lugar and Nunn. The United States missed a major opportunity to transform counterproliferation while it had the attention and sympathies of the world.

It is not too late to expand the scale and scope of Nunn-Lugar. The expansion would plan for and fund: the final and complete safeguarding of all former Soviet fissile materials, in weapons and non-weapons forms; bolder inroads into former Soviet biological and chemical stockpiles and facilities; collection of all significant caches of highly enriched uranium worldwide, eliminating these "sleeper cells" of nuclear terrorism; complete and verifiable elimination of WMD programs in Iraq, Libya, Iran, and North Korea as and when circumstances permit; promulgation and adoption of world-class standards for inventory control, safety, and security for all weapons and weapons-usable materials; strengthening border and export controls; and devising cooperative international responses (NEST teams, radiological public health measures, forensics, and so on) in the event of an incident of nuclear terrorism.

As you have noted, Mr. Chairman, Nunn-Lugar is much praised but little funded in Washington and other capitals. Here in Washington there are tenacious opponents in Congress and even in the administration, despite the fact that President Bush has voiced his support for the program.

3. *Update and upgrade the Nuclear Nonproliferation Treaty.* The NPT is sometimes disparaged because, it is said, the "bad guys" can ignore it with impunity (since it has inadequate verification and enforcement provisions) and the "good guys" would be good with or without an agreement. This contention is wrong for two reasons.

First, the world does not divide neatly into "good guys" and "bad guys" in regard to proliferation behavior: there is a substantial "in-between" category. This group has been represented over time by Ukraine, Kazakhstan, and Belarus (which chose to forsake the nuclear weapons they inherited from the Soviet Union); Argentina and Brazil (which mutually agreed to give up their nuclear programs); Taiwan and South Korea (which chose U.S. protection over nuclear weapons); and South Africa (which changed regimes and thus its sense of external threat). In all these cases, the allure of greater international acceptance if they abandoned their nuclear ambitions and signed the NPT was one of the deciding factors.

Secondly, it is important to note that agreements like the NPT are, in fact, useful even in dealing with the "bad guys" in an indirect way. When it becomes necessary for the United States to lead action against the rogues, the international consensus against WMD embodied in arms control agreements provides a framework for the United States to marshal the support of other nations.

While the NPT has great value in its current form, its provisions can and should be strengthened. One problem is that the concept of a so-called "peaceful atom," dating to the 1960s when the NPT was negotiated, constitutes a huge loophole in the regime that must be closed. Bill Perry has mentioned this problem, and Arnie Kanter will cover it in more detail. A second problem with the NPT is the weaknesses of its verification and enforcement provisions, which need to be addressed.

Arms control plays a limited role in the counterproliferation toolbox. But in this it is not different from all the other tools. Each tool has its limitations, but also its place. The United States should be taking the lead in fixing the NPT, not in disparaging it.

4. *Make counterproliferation an integral part of Pentagon Transformation.* In the 1990s the term "counterproliferation" was coined in the Pentagon to signify that contending with WMD was an important DOD mission in the post-Cold War world. A number of counterproliferation programs were created within DOD to try to focus research, development, and acquisition on producing non-nuclear counters to WMD on the battlefield. Nuclear retaliation for use of WMD against U.S. troops was always an option, but not all opponents will necessarily be deterred in this way, and in the event of WMD use against us the President deserves better options than firing U.S. nuclear weapons.

Over time, the counterproliferation programs were expanded to protecting rear areas—ports and airfields in the theater of war—against chemical and biological weapons attack. Subsequently, the technologies for protecting allied rear areas were recognized to be applicable to protection of the U.S. homeland from WMD attack. Thus, by 9/11, DOD was recognized as the lead agency in the federal government for developing and fielding technology for countering WMD wielded by both state and non-state actors, both on foreign battlefields and on U.S. territory. Examples of counterproliferation programs, both research and acquisition, were chemical and biological warning sensors, improved vaccines against bioattack, individual and collective protective coverings, special munitions for attacking and neutralizing enemy WMD, radiochemical forensics, and active defenses such as ballistic missile defense.

Today the Pentagon is quite rightly devoting a portion of its growing budget to "transforming" the military to anticipate future threats and field dramatically new technologies. But the core of the effort remains long-range precision strike, close integration of intelligence information with operations, and closer working of Army, Navy, and Air Force units together in "joint" operations. These worthy transformation goals for conventional warfare have not been matched by any comparable counter-WMD emphasis. DOD's counterproliferation programs remain small and scattered among the Services, OSD, "joint" program offices, and the Defense Threat Reduction Agency. Excluding missile defense, these programs amount to only a few billion out of the $400 billion defense budget, far too small a fraction given the importance of the mission. Counterproliferation needs more resources and a clearer management structure in DOD.

5. *Increase focus on WMD terrorism within the Homeland Security program.* A similar observation can be made about the priority given to WMD in the new homeland security agencies and budget. If the worst kind of terrorism imaginable is WMD terrorism, why is so small a fraction of the new homeland security program devoted to innovative efforts to prevent and respond to WMD terrorism?

6. *Overhaul WMD Intelligence: The Specter of Policymaking in the Dark.* No policy tool—neither preemptive destruction, nor disarmament arms control, nor missile defense, nor denial—can be effective if the existence and nature of WMD efforts is unknown or imprecise.

Secretary of Defense Donald Rumsfeld became convinced in the course of his work on ballistic missile proliferation before he took office that adequate intelligence on WMD programs is unlikely to be present in most cases. Given the stakes, he concluded, the U.S. must assume the worst in formulating its policy responses. This logic, encapsulated in the maxim "absence of evidence [of WMD] is not evidence of absence," was the main intellectual argument in the Rumsfeld Commission report leading to the deployment of a National Missile Defense. According to this maxim, intelligence regarding the timetable for the development of an intercontinental ballistic missile threat originating in Iran or North Korea was uncertain enough that it was deemed imprudent for the United States merely to be prepared to deploy a missile defense within a few years (the Clinton administration policy), but instead necessary to undertake deployment immediately.

I myself applied the same logic to the need for a preemptive war in Iraq. I believed it was safer to assume Saddam Hussein was trying to fulfill his long-demonstrated quest for WMD than to interpret the scanty intelligence available as evidence of a scanty WMD program. I still believe my judgment to support the invasion of Iraq was sound on the basis of the information available at the time. But we now know that the overall picture that information painted was incorrect.

The matter of pre-war intelligence on Iraq's WMD is the subject of several ongoing inquiries, and my purpose in raising it is not to anticipate their results but to point to the larger issue of how to improve WMD intelligence in general.

WMD activities are inherently difficult to monitor. It is comparatively easy to monitor the size and disposition of armies, the numbers and types of conventional weaponry like tanks and aircraft, and even the operational doctrines and plans of military establishments (since these generally need to be rehearsed to be effective, and exercises and training can be monitored). By their nature, WMD concentrate destructive power in small packages and tight groups. Both the manufacturing of

chemical and above all biological weapons can take place in small-scale facilities. The plutonium route to nuclear weapons requires reactors and reprocessing facilities that are large and relatively conspicuous, but the uranium route can be pursued in facilities that are modest in size and lack distinctive tell-tale external features.

A profound question bearing upon all of the 8 D's is therefore whether adequate intelligence is likely to be available to make any of them effective; or, alternatively, whether WMD spread is by its nature too difficult to monitor. If the latter is true, the world is doomed to a perpetual situation reminiscent of the "missile gap" of the 1950s, where uncertainties outweigh certainties and policymaking is forced into worst-case scenario mode.

The uncertainties of the 1950s missile gap were substantially dispelled by the invention of satellite reconnaissance. The Soviet Union's missile silo construction and flight tests were visible from space. Today, there are some emerging intelligence technologies that will potentially make a substantial contribution to the collection of quality intelligence on WMD. They are "close-in" technologies as opposed to "from-the-outside-looking-in" like satellite photography. They are described in rough outline in an article I wrote for *Technology in Society,* which will be published soon and which I have appended to this statement.

But no technology in the offing holds the promise of lifting the veil of WMD activities completely the way satellite photography lifted the veil from the Soviet Union's nuclear missile and bomber programs. Accurate intelligence on WMD would therefore be enhanced by two additional ingredients that are matters of policy, not technology.

One ingredient is active cooperation by the parties under surveillance. Just as the Soviet Union allowed overflight of its territory by satellites, governments around the world will have to allow greater access to their territory, facilities, and scientists if there is to be any kind of accurate underpinning of counterproliferation. At a minimum, governments that wish to avoid suspicion (and thus coercion and even preemptive attack) will need to allow the kind of access promised to U.N. inspectors in Iraq before the 2003 war. Access involves the ability to inspect facilities by surprise, take material samples for forensic analysis, install monitoring equipment, and other physical means. It must be complemented by required data declarations, document searches, and interviews of scientists. These are tall orders, since they involve compromises with sovereignty and legitimate military secrecy for the nations inspected, but they are the only way North Korea's WMD ambitions will be verifiably eliminated, or Iran's nuclear power activities fully safeguarded.

The second ingredient must be the shifting of the burden of proof from the international community to the party under suspicion. To make an inspection system of carefully managed, if not totally unfettered, access based on active cooperation succeed, it must be the responsibility of the inspected party to dispel concerns, and not the responsibility of the United States or the international community to "prove" that dangerous WMD activities are underway.

Since proliferation is essentially a scientific activity, we also need to increase the number and level of technical training of the scientists and engineers in the intelligence community, as well as the linkages between the intelligence community and the broader scientific community.

Finally, a great spur to quality and motivation of an intelligence effort is a clear link to action. Since 9/11, as you know, the counterterrorism intelligence effort has become more "actionable." To simplify somewhat, the counterterrorism effort has moved from producing papers characterizing terrorist groups to supporting operations to interdict terrorists. As the counterproliferation efforts gets more operational through covert action, the PSI, expanded Nunn-Lugar, and verifying WMD elimination in Iraq, Libya, and hopefully elsewhere, the demand for "actionable" intelligence will increase. If history is any guide, the intensity and quality of collection and analysis by the intelligence community will increase in response.

Taken together and with urgency, I am optimistic that such steps to overhaul our WMD-related intelligence effort can provide accurate intelligence to undergird all of the 8 D's.

Mr. Chairman and Members of the Committee, the war on terrorism and the war on proliferation are strongly linked in the 21st century. But they are not identical. So far we are waging the war on terrorism much more vigorously than the war on WMD, attacking the "worst people" much more than the "worst weapons." I hope this series of hearings results in an overhaul of counterproliferation that is as far-reaching as the overhaul of counterterrorism that began on 9/11, and that the measures I have recommended provide an agenda for action.

[Attachment.]

OVERHAULING COUNTERPROLIFERATION

(By Ashton B. Carter)

THE NEED FOR AN OVERHAUL OF COUNTERPROLIFERATION

President Bush has rightly proclaimed that keeping the worst weapons—weapons of mass destruction—out of the worst hands—state or non-state actors inclined to use them—is the highest security priority of the era. The policy response to this imperative, however, has been feeble in both the United States and around the world. One would have thought that the sequel of 9/11 would have been a comprehensive overhaul of the world's toolbox of counters to proliferation of WMD to state and non-state parties. But no such overhaul was undertaken.

To be sure, there have been overhauls of parts of the U.S. government in response to 9/11, some of them—though not all—constructive. A truly global coalition took the offensive against al Qaeda and other Islamic extremist terrorists, with great effect. An overhaul of the FBI, intended to redirect it from "cracking the case" of terrorist crimes already committed to preventing future terrorist attacks, is at least apparently underway. The redirected FBI domestic counterterrorism effort is, in turn, supposed to be coupled to the CIA's foreign intelligence in new ways through the "Terrorism Threat Integration Center" announced in President Bush's State of the Union Address in January, 2003, at last bridging the false divide between "domestic" and "foreign" intelligence in a globalized world. A new cabinet Department of Homeland Security has been created, the first mission-oriented restructuring of the federal bureaucracy since the founding of the Department of Energy, and the most wide-ranging since the reorganization of the national security establishment following World War II. There has been a total overhaul of U.S. policy towards the Middle East; the results here are not yet in. There has been a reevaluation by the United States and its allies of their alliance relationships, mostly to the detriment of all. And most of all, there has been an acrimonious global debate over the application of one proliferation tool, preemption, to one WMD concern, Iraq's suspected chemical and biological programs and nuclear ambitions.

What is remarkable about the post-9/11 response is how little of the overhaul has focused on WMD. There has been no international coalition to corral all the wherewithal of WMD terrorism—most importantly, nuclear weapons and fissile material—akin to the coalition against al Qaeda. There has yet been no reckoning with the evident fact that intelligence on Saddam Hussein's WMD arsenal differed markedly from what was found immediately after the war. The Department of Homeland Security, despite its new title, remains the amalgam of its diverse constituent bureaucracies rather than an engine of innovative policy. Its focus has been airline security and border control, not WMD. The preoccupation with preemption in Iraq has left the agenda of international cooperation against WMD—export controls and arms control—in the imperfect state in which it was found before 9/11.

As if to highlight the feebleness of this response, North Korea and Iran are boldly moving forward with large-scale nuclear weapons programs, next to which Iraq's chemical and biological weapons ambitions pale in significance. The plutonium and highly enriched uranium made by these governments in coming years will be a threat to humanity not only in their hands, but for generations to come (the half-life of plutonium 239 is 24,000 years; that of uranium 235, 317 million years). It is impossible to know whose hands these materials will fall into in future turns of the wheel of history. Proliferation to states and non-states are linked in the post-9/11 world. A proliferation and counterterrorism disaster of enormous proportions, and a massive failure of U.S. security policy, is in the making.

Had the world taken the direct path from 9/11 to President Bush's imperative, what would the overhaul of counter-WMD policies have been? What should we do now to get back on the direct path?

NO SINGLE TOOL WILL SUFFICE

The most conspicuous step the U.S. government took after 9/11 to fulfill President Bush's commitment to keeping the worst weapons out of the hands of the worst people was to conduct a preemptive war on Iraq's chemical and biological weapons programs. This was necessary to prevent a reversion over time to their previous level of malignant activity, since fatigue would inevitably have set in to the international community's efforts at inspections and sanctions, even assuming these could have been effective at containing Iraq's programs. But however justified, the war in Iraq involved the application of one tool—the last resort of preemptive military force—in one place, Iraq. This tool, while a necessary option of last resort, is hardly a general solution or "doctrine" since it fits so few of the relevant cases.

Proliferation of weapons of mass destruction to states and sub-state terrorists is a complex and varied phenomenon. It therefore calls for a policy approach that is multi-faceted. The stakes are great enough that no tool can be ignored.

For one thing, the "worst weapons" come in degrees. Chemical weapons are not much worse, pound-for-pound or gallon-for-gallon, than ordinary explosives and deserve only the adjective "bad," not "worst." Biological weapons are fearsome and becoming more so: advances in technology make the "old" types of bioweapons like anthrax prone to small-scale cottage industry fabrication that small groups of deviants—even individuals—can muster, while advanced bioscience will create new germs resistant to vaccines and antibiotics. The key to security against this type of "worst" weapon is public health detection and quick response, since bioagents take time to spread and kill.

Time and medicine won't work, however, against a nuclear detonation. It has a deadly finality that puts a premium on prevention before the fact, not response after the fact. But here nature has been kind: nuclear weapons are made from two metals, plutonium and enriched uranium, that do not occur in nature. These materials must be man-made, and it turns out that in both cases the process of making them is comparatively expensive and difficult to conceal. So far, accomplishing it has only been within the reach of governments, not terrorist groups. The key to nuclear security is therefore to ensure that more governments don't make fissile materials, and that all governments that do make fissile materials keep them out of the hands of terrorists.

If you dissect the notion of "worst weapons," therefore, you find a somewhat more complex picture. Likewise if you unpack the idea of "worst people."

Terrorists are easy to include. In this category will figure not only organized and well-funded groups like al Qaeda, but small splinter groups of super-extremists, cults, and ultimately individuals as the destructive power of technology formerly reserved to nations becomes available to smaller and smaller groups. (The perpetrator of the anthrax mailings of October 2001 might have been a lone individual. The Aum Shinnkyo cult in Japan used sarin in the Tokyo subway and attempted release of anthrax spores.)

But when it comes to governments, complexity enters. The most obvious category are the so-called rogue states that seem determined to get nuclear weapons to pose a direct threat to the United States and its interests—surely North Korea and Iran fill this bill today. They must be the object of intense U.S.-led international pressure to prevent them from making enriched uranium or plutonium and, failing that, military force that preempts their ambitions.

But what about Ukraine, Kazakhstan, South Africa, Argentina, Brazil, Taiwan, South Korea, and a host of other nations that might today be nuclear powers—and thus potential sources of "loose nukes" for terrorists as well as a danger in themselves—but were turned back through U.S.-led efforts in the 1980s and 1990s? These efforts included addressing their legitimate security concerns through alliances and security agreements, denying them technology to make nuclear weapons, and applying the weight of international opprobrium for further spread of nuclear weapons embodied in the Nuclear Nonproliferation Treaty. Without this effort these borderline cases might have ended up in the "worst" category.

A third category is represented by all of the other countries on the globe—nearly two hundred of them—that have not made and are not seeking to make nuclear weapons. Powerful leading nations like Germany, Turkey, and Japan—far from rogues—have not gone nuclear despite their clear technical ability to do so. This fact should not be taken for granted. Our policy against WMD must include continuing to dissuade the great bulk of nations from resorting to this extreme. Doing so means maintaining stable and reliable alliances that these nations can depend upon (not just "coalitions of the willing"), and using U.S. power to create an international climate of security and justice.

These examples illustrate the complexity of the problem of WMD, but also the richness of the toolbox for combating them. This toolbox spans dissuasion, prevention, diplomacy, arms control, denial of access to critical technology and materials, defenses, deterrence, and, yes, preemption. All of these tools need to be buttressed with solid intelligence.

What the U.S. should have done after the wake-up call of 9/11 is undertake a comprehensive overhaul of the entire toolbox for combating WMD. We would be much safer today if we had moved outside the one-tool, one-place tunnel-vision approach that characterized preemption in Iraq, however necessary that instance might have been.

No policy instruments—neither preemption, nor arms control, nor missile defense, nor interdiction—can be effective if the existence and nature of WMD efforts is unknown or imprecise.

Secretary of Defense Donald Rumsfeld became convinced in the course of his work on ballistic missile proliferation before he took office that adequate intelligence on WMD programs is unlikely to be present in most cases. Given the stakes, he concluded, the U.S. must assume the worst in formulating, its policy responses. This logic, encapsulated in the maxim "absence of evidence [of WMD] is not evidence of absence," was the main intellectual argument in the influential Rumsfeld Commission report leading to the deployment of a National Missile Defense.[1] According to this maxim, intelligence regarding the timetable for the development of an intercontinental ballistic missile threat originating in Iran or North Korea was uncertain enough that it was deemed insufficient for the United States to be prepared to deploy a missile defense within a few years (the Clinton administration policy), but instead necessary to undertake deployment immediately. Later, when Rumsfeld became Secretary of Defense, this same logic led the United States to preemptive war in Iraq: Better to assume Saddam Hussein was fulfilling his long-demonstrated quest for WMD than to interpret the scanty evidence available as evidence of a scanty WMD program (especially in view of Iraq's persistent and obvious concealment and deception efforts). At the time of this writing, evidence has not been found of the scale and scope of WMD activities that were widely suspected to be taking place in Iraq before the war. This disturbing circumstance underscores the difficulty of obtaining good intelligence on WMD.

WMD activities are inherently difficult to monitor. It is comparatively easy to monitor the size and disposition of armies, the numbers and types of conventional weaponry like tanks and aircraft, and even the operational doctrines and plans of military establishments (since these generally need to be rehearsed to be effective, and exercises and training can be monitored). But by their nature WMD concentrate destructive power in small packages, and tight groups. The manufacturing of chemical and above all biological weapons can take place in small-scale facilities. The plutonium route to nuclear weapons requires reactors and reprocessing facilities that are inherently large and relatively conspicuous. But the uranium route can be pursued in facilities that are modest in size and lack distinctive tell-tale external features.

A profound question affecting all of the tools in the counter-WMD toolbox is therefore whether adequate intelligence is likely to be available to make them effective; or, alternatively, whether WMD spread is inherently too difficult to monitor. If the latter is true, the world is doomed to a perpetual situation reminiscent of the "missile gap" of the 1950s, where uncertainties outweigh certainties and policymaking is forced into worst-case mode.

The uncertainties of the 1950s missile gap were substantially dispelled by the invention of satellite reconnaissance. The Soviet Union's missile silo construction and flight tests were visible from space. Less often appreciated is that the Soviet Union also conducted these activities, in the main, openly and in strictly regimented patterns. Where the Soviet Union wished to practice deception, as in their biological weapons programs, they were largely successful. Satellite reconnaissance also depended on the Soviet Union's cooperation in an essential respect: maintaining the openness of space and the right of uncontested U.S. overflight of its territory.

There are some intelligence technologies emerging that are going to make a substantial contribution to the collection of quality intelligence on WMD. They are "close-in" in nature, rather than "from-the-outside-looking-in" like satellite photography. Many are forensic in nature. They involve, for example, taking material samples and analyzing them for traces of suspicious chemicals, biological material, or radionuclides. The samples can be taken from the air by aircraft (as with krypton 80 air sampling for evidence of spent nuclear fuel reprocessing) or from the ground (plucking a leaf from a bush, wiping a handkerchief across a countertop) overtly or covertly. From a distance, the spectrum of light transmitted through an effluent plume downwind of a smokestack or backscattered from a laser might reveal something about the composition of the plume and thus the activities underway within the building.

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[1] The Honorable Donald H. Rumsfeld, Chairman, Barry M. Blechman, Lee Butler, Richard L. Garwin, William R. Graham, William Schneider, Jr., Larry Welch, Paul D. Wolfowitz, R. James Woolsey *Report of the Commission to Assess the Ballistic Missile Threat to the United States* (Washington, D.C., July 15, 1998), 104th Congress.

Unattended ground sensor (UGS) with a variety of transducers (chemical, acoustic, seismic, radio-frequency, imaging, etc.) can be emplaced by hand or dropped covertly from unmanned aerial vehicles (UAVs). The UGS can have enough on-board data processing capability to require only low-bandwidth exfiltration of their data back to intelligence agencies. This low-bandwidth communication can, in turn, be made very difficult for the nation being spied upon to detect. Cellular telephone technology permits clusters of UGS to be networked. By combining the data from several networked UGS, it might be possible to reduce the rate of false alarms dramatically. UGS can even be made mobile by attaching them to robots, animals, or birds.

Another lucrative technique is "tagging," involving the covert placement of identifying features, transmitters, or chemical markers on objects destined for WMD laboratories or other facilities, and then monitoring the tag remotely or by close-in sample collection.

Finally, there is a revolution underway in close-in signals intelligence, in which cell phones, laptop computers, local area networks, and other information infrastructure of a WMD program are penetrated and exploited.

Miniaturization, as with micro-electro-mechanical (MEMS) devices, is making such close-in techniques easier. Because their use involves a covert dimension, these techniques are more highly classified than the techniques used for verifying superpower arms control agreements. Information from these specialized WMD-specific techniques can be combined with the usual types of intelligence from intercepted communications, defectors, and the occasional spy.

Unfortunately, no technology in the offing appears to have the promise of lifting the veil of WMD activities the way satellite photography lifted the veil from the Soviet Union's nuclear missile and bomber programs. Accurate intelligence on WMD would therefore be enhanced by two additional ingredients that are matters of policy, not technology.

One ingredient is active cooperation by the parties under surveillance. Just as the Soviet Union allowed overflight of its territory by satellites, governments around the world will have to allow greater access to their territory, facilities, and scientists if there is to be any kind of accurate underpinning of counterproliferation. At a minimum, governments that wish to avoid suspicion (and thus coercion and even preemptive attack) will need to allow the kind of access promised to U.N. inspectors in Iraq before the 2003 war. Access involves the ability to inspect facilities by surprise, take material samples for forensic analysis, install monitoring equipment, and other physical means. It must be complemented by required data declarations, document searches, and interviews of scientists. These are tall orders, since they involve compromises with sovereignty and legitimate military secrecy for the nations inspected. But they are the only way North Korea's WMD ambitions will be verifiably eliminated, or Iran's nuclear power activities fully safeguarded.

Accompanying the first ingredient must be a second: the shifting of the burden of proof from the international community to the party under suspicion. To make an inspection system of carefully managed, if not totally unfettered, access based on active cooperation succeed, it must be the responsibility of the inspected party to dispel concerns, and not the responsibility of the United States or the international community to "prove" that dangerous WMD activities are underway.

A COALITION AGAINST WMD TERRORISM: SPREADING NUNN-LUGAR WORLDWIDE

The U.S.-led coalition against terrorism formed after 9/11 has been directed almost single-mindedly against al Qaeda and other Islamist fundamentalist terrorists. A parallel coalition aimed at WMD terrorism should have been spearheaded by the United States after 9/11, capitalizing on the widespread sympathy around the world for the victims of the attacks on the United States. The United States missed a major opportunity to transform counterproliferation.

Such a global coalition against WMD terrorism was in fact proposed by Senator Richard Lugar and former Senator Sam Nunn as the logical extension of the Nunn-Lugar program, which has successfully eliminated or safeguarded much of the former Soviet Union's WMD. Rather than seeking out and neutralizing cells of al Qaeda terrorists, the coalition against WMD terrorism would aim to eliminate all unsafeguarded "cells" of the wherewithal of WMD terrorism, especially fissile materials. It would also aspire to global membership, since all governments should share a deep common interest in preventing WMD from falling into non governmental hands.

The report of a conference sponsored by the Nuclear Threat Initiative described the activities of such a coalition.[2] For nuclear terrorism, the cooperative activities of the global coalition would include:

- Establishing common, "world-class" standards for inventory control, safety, and security for weapons and weapons-usable materials—standards of the kind worked out between Russia and the United States in the Nunn-Lugar program.
- Establishing progressively stronger standards of transparency, to demonstrate to others that standards are being met.
- Providing assistance to those who need help meeting the Coalition's standards.
- Cooperating to provide effective border and export controls regarding nuclear materials.
- Devising cooperative procedures to find and regain control of bombs or fissile materials if they are lost or seized by terrorists. One possibility is a Coalition version of the U.S. Department of Energy's Nuclear Emergency Search Team (NEST)—a "global NEST." Another possibility is to agree to facilitate deployment of national NEST teams, in the way that many nations deploy canine search teams to earthquake sites to search for survivors.
- Planning and researching cooperative responses to a nuclear or radiological explosion, such as mapping the contaminated area, addressing mass casualties, administering public health measures like iodine pills and cleaning up contaminated soil.
- Cooperating on forensic radiochemical techniques to find the source of a nuclear incident from its residue.

For bioterrorism, Nunn and Lugar envisioned the following Coalition activities:

- Establishing common, "world-class" techniques for safeguarding biological materials in preparation, handling, and scientific use.
- Developing public health surveillance methods on a global scale to detect an incident of bioterrorism in its early stages. Such methods would also provide important benefits in combating infectious disease and improving global public health.
- Shaping normative standards for the conduct of scientific practice in the area of biotechnology and microbiology, including the possibility of making it a universal crime, punishable under national laws, to make or assist the making of bioweapons.
- Cooperating in research on diagnosis, prophylaxis (e.g., vaccines against bioagents), and treatment (e.g., antibiotics and antivirals).
- Cooperating in developing protective techniques like inhalation masks and filtered ventilation systems.
- Cooperating in developing techniques for decontaminating buildings that have been attacked (as was needed in the Hart Senate Office Building after anthrax-contaminated mail was sent there).
- Cooperating in forensic techniques for identifying the perpetrators of a bioattack (as was needed in the analysis of the anthrax mailings in the United States).

While much of the momentum behind U.S. diplomacy in the wake of 9/11 has dissipated through the passage of time and the war in Iraq, it is not too late for the United States to attempt to create a new framework for international cooperative action against WMD—a global coalition against WMD terrorism.

WMD AND HOMELAND SECURITY

Besides striking at Islamist terrorists worldwide, the other main U.S, response to 9/11 has been the creation of a White House Office of Homeland Security (OHS) and a new Department of Homeland Security (DHS). In 1958, the shock of the Soviet launch of Sputnik led to the creation of the President's Science Advisory Committee, the Defense Advanced Research Projects Agency, the National Reconnaissance Office, and the National Aeronautics and Space Administration. These institutions in turn spurred new technologies, techniques, and policies to counter the Soviet strategic threat. A comparable spurt of innovative energy does not seem likely from the OHS and DHS, especially with respect to the worst type of terrorism—WMD terrorism.

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[2] Ashton B. Carter, *Trip Report: Nunn-Lugar Sites in Russia,* a memo to colleagues of the Preventive Defense Project (3 June 2002); and Ashton B. Carter, "Throw the Net Worldwide." *The Washington Post* (12 June 2002), A-31.

Little focus on WMD is apparent in the fledgling DHS. Its organization chart contains no overall office devoted to WMD terrorism, even though this is the most important kind of terrorism. Most of its energy to date has seemingly been devoted to merging the different traditions and bureaucracies of its constituent parts. In the main, these constituents are concerned with airline security, border control, and emergency response, not WMD. Some small offices concerned with WMD have been transferred to the new Department from other agencies, where they reside in a tiny "Science and Technology" Undersecretariat that disposes of only 2% of the DHS budget. But there is no evidence that this new bureaucracy, heralded as the most revolutionary governmental reconfiguration since the late 1940s, will revolutionize counterproliferation..

Meanwhile, the bureaucratic exertions associated with the new Department have entirely eclipsed the White House OHS. OHS is supposed to orchestrate the investments of the major departments that already have responsibility and technical capability in WMD—DHS, DOD, the Department of Energy, the Department of Health and Human Services, the Intelligence Community, and others—to create new capabilities, new strategies, and new technologies for counterproliferation.[3] But in the absence of a strong White House hand as a consequence of the withering of OHS, these departments will revert to fitting countering WMD in at the margins of their traditional activities.

COUNTERPROLIFERATION IN THE PENTAGON

One department besides DHS that has important capabilities and responsibilities for countering WMD, and especially for the development of new technology, is the Department of Defense. The term "counterproliferation" was coined by former Secretary of Defense Les Aspin to signify that contending with WMD was an important DOD mission in the post-Cold War world.[4] In the 1990s, a number of counterproliferation programs were created within DOD to try to focus research, development, and acquisition on producing non-nuclear counters to WMD on the battlefield. Over time the programs expanded to protecting rear areas—ports and airfields in the theater of war—against chemical and biological weapons attack. Next, the technologies for protecting allied rear areas were recognized to be applicable to protection of the U.S. homeland from WMD attack. Thus, by 9/11 DOD was recognized as a lead agency in the U.S. for developing and fielding technology for countering WMD wielded by both state and non-state actors, both on foreign battlefields and on U.S. territory. Yet DOD's counterproliferation programs remained small and fragmented. The great bulk of DOD's post-Cold War investments in new technology ignored WMD. Under the 1990s slogan "revolution in military affairs," most of the innovative thinking and spending in DOD was directed at perfecting conventional joint military operations.

Surprisingly little changed in DOD after 9/11. Secretary of Defense Donald Rumsfeld has proclaimed "transformation" to be the successor to "revolution in military affairs." But the core of the effort is long-range precision attack, close integration of intelligence information with operations, and closer working of Army, Navy, and Air Force together in "joint" operations. These worthy transformation goals have not been matched by any comparable counter-WMD emphasis. DOD's counterproliferation programs remain small and scattered. Excluding missile defense, these programs amount to only a few billion out of the $400 billion defense budget, far too small a fraction given the importance of the mission.

U.S. NUCLEAR WEAPONS PROGRAMS

An important question for counterproliferation is whether U.S. deployments and doctrine for its own nuclear arsenal influence the spread of WMD elsewhere in the world. In the main, the influence is marginal.

It is unlikely that Pyongyang's or Teheran's calculations, let alone al Qaeda's, are significantly dependent on whether the United States has 6000, 3500, or 2200 deployed strategic weapons (these are the numbers permitted under the last three rounds of U.S.-Russian nuclear arms control), retains tactical nuclear weapons deployed in Europe, researches or develops earth-penetrating or other new types of nu-

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[3] Ashton B. Carter, "Roles for the White House and the New Department." Testimony on the Relationship between a Department of Homeland Security and the Intelligence Community before the Governmental Affairs Committee, U.S. Senate, 26 June 2002. Footnote to ABC Senate Gov Affairs Testimony.

[4] Footnote to Aspin, Remarks by the Honorable Les Aspin, Secretary of Defense, National Academy of Sciences Committee on International Security and Arms Control, December 7, 1993, speech.

clear weapons, or has a doctrine that either threatens or foreswears nuclear retaliation if chemical or biological weapons are used against the U.S. or its allies. The fear that the United States would or could use nuclear weapons against them if they used WMD is a useful component of deterrence against proliferating governments. But the United States has another tool of deterrence besides nuclear weapons—its unmatched conventional military power. Terrorists, for their part, are likely not deterred by threats of punishment at all.

On the other hand, countering North Korean and Iranian WMD ambitions can be assisted with the support of the international community. Defeating al Qaeda positively depends upon cooperation by foreign governments in intelligence and law enforcement; in this area a unilateral option is not available. International support for these U.S.-led efforts against WMD is influenced, again perhaps only at the margin, by U.S. nuclear policy. To the extent that the United States suggests a growing reliance of its own on nuclear weapons for security, it makes the job of marshaling international cooperation in a coalition against WMD terrorism or an overhaul of WMD arms control more difficult.

These marginal costs of emphasizing the role of U.S. nuclear weapons in its own security should therefore be weighed against the marginal benefits of changes in the U.S. nuclear posture. Recently the United States has embarked on three changes that do not meet this test.

One change is to combine nuclear weapons, missile defenses, and long-range conventional weapons into a "new Triad," replacing the traditional nuclear "Triad" of land-based missiles, submarine-based missiles, and strategic bombers. This construct accomplishes little, but it has the detrimental and misleading effect of suggesting to the world that U.S. presidents will regard use of nuclear weapons and use of conventional weapons as differing in degree rather than in kind.

Another change with little benefit is to accelerate the schedule for the resumption of underground nuclear testing. The new schedule allows weapons scientists to test at the earliest time they can be ready to take useful data from the detonation. But given the stakes involved, the schedule for resuming underground testing should instead be driven by considerations of military necessity, and here the case for the change has not been made.

The third change is to embark on research and development of a new type of earth-penetrating nuclear warhead, ostensibly to destroy deeply buried WMD facilities. Once again, the military rationale for this move is not strong, since the United States already has earth-penetrating nuclear weapons and the focus on munitions begs the larger question problem of finding such targets in the first place. The political enormity (and much of the fallout contamination) of a decision to cross the nuclear divide would not be much reduced by changing the design of the nuclear weapon. Once again, the benefit of the proposed innovation in U.S. nuclear programs is marginal.

The better U.S. military strategy would be to seek to widen and prolong the huge gap between U.S. conventional military capabilities and those of any other nation, and to use transformational technology to narrow, not widen, the range of circumstances in which this nation would resort to use of nuclear weapons.

STRENGTHENING THE ROLE OF ARMS CONTROL

Another tool is arms control regimes like the Nuclear Nonproliferation Treaty (NPT), the Chemical Weapons Convention (CWC), and the Biological Weapons Convention (BWC). These are sometime disparaged as useless tools, since, the argument goes, the "rogues" ignore them with impunity (since they have inadequate verification and enforcement provisions) and the rest of the "good" countries are unaffected by them. But this argument is wrong for two reasons.

First, the world does not consist of "rogue" and "good" states as regards proliferation behavior: there is an important "in-between" category. This category has been represented over time by Ukraine, Kazakhstan, and Belarus (which chose to forsake the nuclear weapons they inherited from the Soviet Union); Argentina and Brazil (which mutually agreed to give up their nuclear programs); Taiwan and South Korea (which chose U.S. protection over nuclear weapons); and South Africa (which changed regimes and thus sense of external threat). In all these cases, the allure of greater international acceptance if they abandoned their nuclear ambitions was one important factor in their decision.

The second reason those who disparage counterproliferation arms control are wrong is that the agreements are, in fact, useful even in dealing with the "rogues": When it comes time for the United States to lead action against the rogues, the international consensus against WMD embodied in the NPT, CWC, and BWC helps the United States to marshal the support of other nations in confronting the rogue.

Therefore the arms control regimes have some value even if their provisions are far from perfect. But these provisions can be strengthened, and the U.S. should be leading the way to strengthen them rather than disparaging them. One problem affecting the NPT is dual use of nuclear technology. The "peaceful atom," dating to the 1960s when the NPT was negotiated, constitutes a huge loophole in the regime that must be closed. Non-nuclear states are today permitted by the NPT to have closed nuclear fuel cycles. They may enrich uranium to make reactor fuel, and they may reprocess spent reactor fuel to extract plutonium—provided they declare their activities to the IAEA and allow the IAEA to confirm the declaration. But possession of enrichment and reprocessing facilities positions a country dangerously close to achieving nuclear weapons capability. Iran is an important case in point. In the future, nonnuclear weapons states should be obliged to import enriched fuel from supplier states and ship spent fuel back to the suppliers, foregoing both enrichment and reprocessing. In return, the supplying nations would be obliged to provide fuel services on an economically fair basis, which will invariably be cheaper for the importer than building their own facilities.

Verification and enforcement provisions of the arms control agreements should also be strengthened. This, like improving intelligence, will not be an easy task given the inherent ease of concealment of WMD programs. But inspections called for by arms control agreements, and the international pressure shifting the burden of proof to potential proliferators, can strengthen intelligence, as noted above. And accurate intelligence is as necessary to all the other tools of counterproliferation as it is to arms control. Arms control plays a limited role in the toolbox. But in this it is not different from all the other tools, each of which has its limitations, but each its place.

CONCLUSION: OVERHAUL COUNTERPROLIFERATION BEFORE IT'S TOO LATE

In stating that keeping the worst weapons out of the hands of the worst people is the highest security imperative for the world in this era, President Bush has made the appropriate call to action. But to date the action itself has been lacking when it comes to policies specifically designed to keep WMD out of hostile hands, either nation-states or terrorists. After 9/11 the United States regretted that it had not taken steps to overhaul its counterterrorism capabilities years earlier, steps that seemed tragically obvious after the World Trade Center towers were gone. An overhaul of counterproliferation is needed now. It will be unfortunate if the overhaul is undertaken only after the need for it is made tragically obvious by an incident of mass destruction.

The CHAIRMAN. Thank you very much, Secretary Carter, for the very comprehensive statement.

Mr. Arnie Kanter.

OPENING STATEMENT OF HON. ARNOLD KANTER, SENIOR FELLOW, FORUM FOR INTERNATIONAL POLICY AND PRINCIPAL, THE SCOWCROFT GROUP, WASHINGTON, DC

Mr. KANTER. Mr. Chairman, Senator Nelson, I appreciate this opportunity to join Secretary Perry and Secretary Carter in appearing before you this morning. And Mr. Chairman I want to thank you very much for your generous comments. I appreciate them.

I also want to take this opportunity on behalf of Brent Scowcroft, to express his regrets that he couldn't be here today as he is unavoidably out of town. And he asked me to pass along his appreciation to the chairman of the committee for these hearings and his conviction that they could not be more important or more timely.

I have submitted a statement for the record and I would like to take this opportunity to summarize some of the main points.

My main purpose today is to present a way of thinking about the problem of nuclear proliferation, and to suggest some elements of a comprehensive strategy for combating that nuclear threat.

I am sure that you are under no such illusions, it will quickly become apparent that I don't have all the answers, in fact, I don't even have very many of them.

But I do hope that I will be able to contribute to efforts to move the debate beyond familiar recitations about how serious this problem is, to an examination of strategic approaches and concrete measures to deal with the problem.

Let me begin by repeating what Bill Perry and Ash Carter have already said, but which I believe cannot be said often enough.

There is no one single approach. There is no one policy instrument that can solve the nuclear proliferation problem by itself.

Moreover, the search for such a silver bullet will prove futile or perhaps worse.

But having said that, let me add two other points. First, any set of measures is likely to be more effective if the constituent elements are fitted together and synchronized with one another to form a coherent multifaceted strategy.

Second, because the nuclear proliferation threat itself is diverse rather than homogeneous, the strategies to combat nuclear proliferation likewise should be differentiated.

Simply stated, I believe we need a strategy that is not only comprehensive, but one whose respective elements are focused on particular parts of the overall threat.

Let me try to explain what I mean by delineating some categories of policy responses. In doing so, it is convenient, although I readily admit hardly original, to think about the nuclear proliferation problem as a matter of supply and demand.

On the demand side, I think it is useful to distinguish among three different kinds. One kind is the demand for a nuclear weapons capability per se. The source of this demand is what I call the "nuclear weapon wanna-bes," the bad guys who usually are foremost in our minds when we talk about the problem of nuclear proliferation.

A second source of demand is for Nuclear power generation to meet energy needs. These are the "nuclear power wanna-bes" who do not harbor any secret ambitions to acquire nuclear weapons.

Finally, there is an imprecise middle category composed of those who are explicitly pursuing nuclear power capabilities, but are doing so not only to meet energy requirements, but also to create the option of nuclear weapons sometime in the future.

On the supply side, I also think it is useful to distinguish among three categories for policy proposes. One kind of supply is the supply of nuclear weapons technology, equipment, material and know-how.

Simply put, this is about the intentional provision of a nuclear weapons capability, and until recently, A.Q. Khan was its poster child. It is also the kind of supply problem that has been the major, if not predominant, focus of our non-proliferation efforts.

A second kind of supply is represented by the stores of dispersed nuclear warheads, and the stockpiles of inadequately secured nuclear weapons material. Much, but I want to emphasize, not all of which is concentrated in Russia. This is a point to which I will return.

This is the "loose nukes" problem, one that the rise of global terrorism has turned into an all-too-plausible nightmare. The Nunn-Lugar and related programs are designed to address this part of the supply problem.

A third kind of supply is the inadvertent but inescapable byproduct of civilian nuclear power programs, notably those activities related to enrichment technology, and to the production, storage and reprocessing of nuclear fuel.

Because the fact is that attributes that are intrinsic to the closed nuclear fuel cycle constitute an ongoing potential to produce material for nuclear weapons.

Now this is an aspect of nuclear proliferation that we have recognized and worried about for some time, but I believe we're just beginning to address in ways that hold some promise of being effective. Now I will offer some specific suggestions about how to address this part of the problem in a moment.

The range of complementary, but distinct, tasks that a comprehensive nuclear non-proliferation policy must accomplish correspond to these multiple sources of demand and supply. But reduced to their essence, I see three major tasks.

One, to actively frustrate the ambitions of "nuclear weapon wanna-bes" by denying them access to critical technology, equipment, and materials.

Two, to construct an effective network of effective sanctions and powerful positive incentives that combine to present "nuclear power wanna-bes" with an all but irresistible choice to abandon their nuclear ambitions.

Three, to put in place both incentives and barriers that effectively discourage not only "nuclear power wanna-bes," but also countries in that undecided middle category from seriously considering, much less pursuing, a nuclear weapons option.

I do not pretend to have a complete blueprint or a detailed road map for how the accomplish these three tasks. What follows are some illustrations and observations.

In the interest of time, I will not detail the reasons why, but on the whole, I believe that the challenge of denying determined "nuclear weapon wanna-bes" access to the things they need has received the most policy attention in our non-proliferation policy.

And recognizing that there is a great deal more to be done, this part of our non-proliferation policy also probably is the furthest advanced of any of the elements of a comprehensive strategy.

On the subject of loose nukes, a great deal has already been written and spoken, and so I am going to confine myself to making three points.

First, all roads lead back to Russia when we talk about combating the spread of nuclear weapons in the sense that no policy can hope to be successful if it does not succeed in Russia and it does not succeed with Russia. As a corollary, no policy can succeed if we do not have a relationship with Russia that encourages real cooperation and real accountability on this issue.

Second, adequate resources may not make all of the difference, but inadequate resources are a virtual guarantee of failure. Money is central, but this is not just a matter of money. The Nunn-Lugar program needs to be treated consistently as a high priority both by

the administration and the Congress rather than just another laudable program that receives intermittent attention and some share of discretionary resources.

Third, this is not just a problem with Russia and it is not just a problem in Russia. While it is true that in quantitative terms, most of the loose nuke problem is located in Russia, not all of it is. From research reactors in Belgrade, to Urenco [Uranium Enrichment Services Worldwide] designs for an A.Q. Khan to steal, the loose nukes threat is surprisingly dispersed. I think two implications follow.

One is that the Nunn-Lugar and related programs need to be truly international rather than FSU-centric, both in concept and execution.

The other implication, underscoring a point that Secretary Perry has already made, is that efforts to deal with loose nukes problem benefits immensely from being a multilateral rather than a predominantly or exclusively U.S. responsibility.

And obviously the benefits of international cooperation extend way beyond the loose nukes problem. As the success of the Proliferation Security Initiative and I think especially the break through on Libya made clear, it is hard to imagine virtually any aspect of a nuclear non-proliferation policy that would not be more effective if it has the active cooperation of other governments. Indeed, it is easy to imagine many initiatives that could only be successful with such cooperation.

The final problem that I want to address is the one posed by the "nuclear power wanna-bes." Specifically, I want to focus on the challenge of encouraging safe civilian nuclear power to meet global energy needs and at the same time discouraging any temptation, now or in the future, to use such programs to create a nuclear weapons capability.

As I noted earlier, developing civilian nuclear power to meet energy requirements can pose intrinsic and serious nuclear proliferation risks. This is neither a new problem nor one that has been only recently identified.

But in my opinion, it has not received the attention it warrants, particularly in the context of fashioning a comprehensive and coherent policy.

Recall that the Nuclear Non-Proliferation Treaty explicitly allows nations that foreswear nuclear weapons to develop nuclear power for peaceful purposes.

Specifically, under the terms of the NPT, non-nuclear weapon signatories may build and operate what are called closed fuel cycles. The problem is that closed fuel cycles give these countries an inherent and virtually inescapable capacity to produce fissile material required for a nuclear weapon. This is because facilities and technology used to enriched uranium for power reactors can also be used to produce HEU for weapons, and because reprocessing spent fuel yields plutonium that can be fashioned into nuclear weapons.

And as with the cases of North Korea and presumptively Iran demonstrate, regimes that intend to violate the treaty's ban on nuclear weapons can gather the resources necessary to make nuclear weapons, and can even start to build nuclear weapons clandestinely, all the while seeming to remain within the terms of the

treaty. They can then abrogate the treaty and proceed to build a nuclear arsenal in the open.

Now as serious as this potentially may be, I think the problem is broader than the "nuclear weapons wanna-bes" using the NPT as cover as they pursue their ambitions. The right to have a closed fuel cycle also provides an attractive vehicle for countries that, for whatever reason, want to create and maintain an option to acquire nuclear weapons at some time in the future. Indeed, even "nuclear power wanna-bes" who may not have any present intention or desire to create such an option, nevertheless will have done so if they construct a closed fuel cycle.

Now, I want to be clear that I am not here to attack the Nuclear Non-Proliferation Treaty. As we said in our op-ed, if we didn't have an NPT we surely would want to invent it. But at the same time, I also want to emphasize that it would be a serious mistake to regard the NPT as perfect and complete, or as some sort of sacrosanct last word on international regimes and arrangements to address the non-proliferation threat.

There is a loophole. But in addressing this loophole, one pitfall that I think we need to be very careful to avoid is to let nuclear non-proliferation become the enemy of civilian nuclear power. Nuclear power generation has a potentially important role to play in meeting global energy needs and addressing global warming concerns. We should try to develop and exploit that potential and not cripple it.

Perhaps more to the point, posing the issue as nuclear non-proliferation versus nuclear power presents a false choice and invites a battle that need not be fought.

Instead, the United States should take the lead in building an international regime alongside the NPT that promotes civilian nuclear power but discourages or prohibits closed nuclear fuel cycles. Such a regime would consist of obligations both on the part of countries that want to develop a civilian nuclear power industry, and those countries that provide the required capabilities.

The additional obligations of the customers are simply stated. In addition to their NPT obligations, the customers would agree not to manufacture, store, or reprocess nuclear fuel. And they would also agree to inspections to confirm that they were living up to these undertakings.

Those countries that now sell peaceful nuclear technology in accordance with the NPT would take on both positive and negative obligations.

First, the suppliers would agree to forego the sale or transfer of any equipment or technology designed for the enrichment or reprocessing of nuclear fuel to any country that does not already have a fully operational nuclear fuel cycle. These suppliers would also agree to provide technology, equipment, or fuel for nuclear power reactors only to those countries that have renounced their right to enrich and reprocess nuclear fuel themselves.

Second, the suppliers would guarantee the reliable supply of nuclear fuel and the retrieval of spent fuel at competitive prices to those customer countries that agree to this new arrangement. And to enhance the attractiveness of such a bargain, and to try to make it all but economically irresistible. I believe the consideration

should also be given to providing these services not merely at competitive, but deeply subsidized prices. In this connection, John Deutch has calculated that such subsidies would be quite affordable, even if the deployment of civilian nuclear reactors expanded dramatically.

Moreover, there is every reason to believe that the United States would not have to foot the whole bill itself, not least because other countries that would be providing nuclear fuel services under this arrangement would face powerful domestic political incentives to subsidize the costs of those services in order to remain competitive in the global nuclear fuel industry.

Now, obviously, what I have presented are no more than the broadest outlines of such a regime, one that parallels in some respects some of the ideas that President Bush presented in his February 11 speech at the National Defense University. A large number of details would have to be filled in, such as what exactly would be the arrangements for international consortium that provided guaranteed fuel services at competitive or subsidized prices.

And there is a long, long list of hard questions to be addressed, ranging from how formal or informal such an international regime should be, to whether and what kind of sanctions should be applied to countries on either the supply side or the customer side who do not join the new arrangements. To questions about how to treat countries like Brazil that have nuclear supplier ambitions, to how to deal with countries like India and Pakistan, that have demonstrated nuclear weapon capabilities but are outside the NPT. And I think we need to be honest with ourselves that even more so than the case of the NPT itself, there are those who will charge—with some justification—that any such international arrangement would be highly discriminatory. It would be.

And even if all of these objections could be answered and the various problems and objections can be overcome, the new regime would not be a cure-all because there is no one right approach, there is no silver bullet.

But I do believe that it could provide a key building block in a comprehensive strategy to combat nuclear proliferation while at the same time promoting the development of a civilian nuclear energy industry. And that potential convinces me that an approach along these lines warrants serious consideration.

Thank you.

[The prepared statement of Secretary Kanter follows:]

PREPARED STATEMENT OF HON. ARNOLD KANTER

COUNTERING NUCLEAR PROLIFERATION

Mr. Chairman and Members of the Committee, I appreciate this opportunity to join Bill Perry and Ash Carter this morning to discuss "Nonproliferation and Arms Control: Strategic Choices." I also want to take this opportunity on behalf of Brent Scowcroft to express his regret that he is unavoidably out of town this week and therefore could not appear. Brent did ask me to convey his appreciation to the Chairman and the Committee for holding the hearings that are being launched today, and his conviction that they could not be more important or timely.

Ash Carter has provided a framework and approach for addressing the broad WMD problem. Building on some of the ideas that were sketched out in the New York Times op-ed that I co-authored with Ash, Bill, and Brent, I want to concentrate on one particular WMD problem: the proliferation of nuclear weapons and material that is among the most serious—and proximate—security risks we face,

and that is surely the most serious proliferation risk that we confront. My main purpose today is to present a way of thinking about the problem of nuclear proliferation and to suggest some elements of a comprehensive strategy for addressing that nuclear threat.

As will quickly become apparent, I surely do not have all of the answers. Indeed, any such strategy would have to tackle a series of questions that do not have any easy—or, in some cases, even any good—answers. But in what I understand to be the spirit of these hearings, I hope I will be able to contribute to efforts to move the debate beyond familiar reiterations of how serious the nuclear proliferation threat is to an examination of strategic approaches and concrete measures to deal with it.

Let me begin by repeating what has already been said, but probably cannot be said often enough: there is no one right approach or single policy instrument that can solve the nuclear proliferation problem by itself, and the search for such a silver bullet will prove futile or worse. I believe that this is the overarching theme of President Bush's February 11 speech at NDU, which presented a series of seven measures that, taken together, constitute a good agenda for action. But let me quickly add two points. First, any set of measures is likely to be more effective if the constituent elements are fitted together to form a coherent, multi-faceted strategy. Second, because the nuclear proliferation threat is diverse rather than homogenous, the strategy to counter nuclear proliferation should likewise be differentiated. Simply stated, we need a strategy that not only is multi-faceted, but also one whose respective elements are focused on particular parts of the overall threat.

A "Supply and Demand" Perspective on Nuclear Proliferation

Let me try to explain what I mean by delineating some categories of problems and policy responses. It is convenient—although hardly original—to think of the nuclear proliferation problem as a matter of "supply" and "demand."

On the "demand" side, I think it is useful to distinguish among three kinds of demand for policy purposes. One kind is the demand for a nuclear weapons capability *per se.* The source of this demand are the nuclear *weapon* wanna-bes, the bad guys whom we usually have foremost in our minds when we talk about the problem of nuclear proliferation. North Korea and, until recently, Libya would be good illustrations of this category. You would not have to be excessively suspicious about Iranian motives to put Tehran in this category as well.

It also is important to distinguish between two kinds of nuclear weapons wanna-bes i.e., states and non-state terrorists, because some policy instruments that are likely to be effective for one kind of nuclear weapon wanna-be are unlikely to be effective with respect to another. In particular, I believe that incentives can play a role in persuading nuclear weapon wanna-be states to abandon their nuclear ambitions, but I am deeply skeptical that they have much if any relevance to terrorists.

A second source of demand is for nuclear power generation to meet energy needs. These are the nuclear *power* wanna-bes who do not harbor any secret plans or ambitions to acquire nuclear weapons. Brazil might be a country you would put into this category.

Finally, there is an admittedly imprecise middle category of demand composed of those who are pursuing nuclear power capabilities not only to meet energy requirements, but also to create an option for nuclear weapons sometime in the future. If Iran is not a nuclear weapon wanna-be, then at a minimum, it surely falls into this category.

On the supply side, it also is useful to distinguish among three categories for policy purposes. One kind is the supply of nuclear weapons technology, equipment, and know-how. Put simply, this is about the intentional provision of a nuclear weapons capability, and—until recently—A.Q. Khan was its poster child. It also is the kind of "supply" problem that has been the major, if not predominant, focus of our nuclear nonproliferation efforts. The Proliferation Security Initiative is a recent and promising example of a policy instrument designed to address this particular supply problem.

A second kind of "supply" is represented by the stores of dispersed nuclear warheads, and the stockpiles of inadequately secured nuclear weapons material, much—but, it must be emphasized, not all—of which is concentrated in Russia. This is the "loose nukes" problem, one that the rise of global terrorism has turned into an all too plausible nightmare. For nuclear weapon wanna-bes, access to the weapons themselves is a dream come true. But access to nuclear weapon material would be the next best thing. After all, the principal obstacle that nuclear weapon wanna-bes face—and toward which most of their efforts are directed—is acquiring or making the enriched uranium and plutonium needed for a weapon. Nunn-Lugar and related programs are designed to address this part of the supply problem.

A third kind of "supply" is the inadvertent but inescapable byproduct of civilian nuclear power programs, notably those activities related to the production, storage, and reprocessing of nuclear fuel. That is, those attributes that are intrinsic to a closed nuclear fuel cycle constitute an ongoing potential to produce material for nuclear weapons. (This is one reason why the recent North Korean proposal to preserve a civilian nuclear program—if it is serious rather than a negotiating ploy—is an utter non-starter.) This is an aspect of nuclear proliferation that we have recognized *worried about for some time, but are just beginning to address in ways that I think hold some promise of being effective. I will offer some specific suggestions in a moment.*

The range of complementary, yet distinct, tasks that a comprehensive and coherent nuclear nonproliferation policy must accomplish correspond to these multiple sources of supply and demand. But reduced to their essence, these tasks are (1) to actively *frustrate* the ambitions of the nuclear weapon wanna-bes by denying them access to critical technology, equipment, and materials, (2) to construct a network of effective sanctions and powerful positive incentives that present nuclear weapon wanna-bes with an all but irresistible choice to abandon their nuclear ambitions, and (3) to put in place both incentives and barriers that effectively *discourage* not only nuclear power wanna-bes but also countries in the undecided middle category from seriously considering, much less pursuing, a nuclear weapons option.

Many of the elements of such a multi-faceted policy already are in place. Much of what remains to be done is to fill in some hard-to-fill-in blanks, ensure that both the right kind and enough resources are being devoted to the respective tasks and—very important—make sure that there is close coordination among the parts so that the result is a coherent whole. I do not pretend to have a complete blueprint or a detailed road map for reaching this goal. What follows are some illustrations and observations that I hope will contribute to the process.

Frustrating Nuclear Weapon Wanna-bes

Let me begin with the challenge of denying determined nuclear weapon wanna-bes access to the technology, equipment, material, and know-how they need to achieve their goal. Here—and being careful not to claim victory prematurely—I think we can point to some recent success stories such as A.Q. Khan, and Libya and, in a way, even Iran. Behind these well-publicized success stories are many more less visible and less grand, but still important, victories. There also are new tough-minded measures such as the Proliferation Security Initiative. We of course can and should always hope to do better, beginning with steadily improving intelligence and intelligence operations, and making as determined an effort as possible to broaden and strengthen international cooperation. But on the whole, I believe that this part of strategy to counter nuclear proliferation not only has received the most attention, but also probably is the furthest advanced of any of the elements.

Looking ahead, I think that the Libyan case is particularly instructive in at least three respects:

- First, Libya is the most recent of several countries to provide grounds for optimism that even nuclear weapon wanna-bes can be persuaded to reverse course and abandon their nuclear weapons ambitions.
- Second, our apparent success in Libya seems to have based on a strategy that (a) made Libyan efforts to acquire a nuclear weapons capability so difficult and frustrating that it helped persuade Qadhafi that the attempt would ultimately prove futile, (b) imposed real and increasingly painful costs on Libya so long as it pursued its nuclear weapons ambitions, and (c) held out the credible prospect of tangible and meaningful benefits if Qadhafi turned away from the nuclear weapons path.
- Third, I would not be surprised if we learn that the supply side consists not only of shadowy figures and underground nuclear supermarkets, but also active roles by companies and individuals—if not governments—in Europe and other places that we count among our friends and allies.

For all these reasons, it strikes me that it would be worthwhile to study the Libyan case closely—in both its classified and unclassified aspects—to see the extent to which its lessons can be applied to other hard nuclear nonproliferation cases, perhaps starting with Iran.

Containing "Loose Nukes"

A great deal already has been spoken and written about the problem of "loose nukes," so I will confine myself to underscoring three points. First, all roads lead back to Russia when we are talking about combating the spread of nuclear weapons—not only, but especially, when talking about loose nukes—in the sense that no

policy can hope to be successful if it does not succeed in Russia. As a corollary, no policy can succeed in Russia if we do not have a relationship with the Russians that encourages real cooperation on this issue, something that the Nunn-Lugar track record clearly indicates neither can be taken for granted nor achieved with money alone.

Second, adequate resources may not make all the difference, but inadequate resources are a virtual guarantee of failure. Money is central, but this is not just a matter of money. Nunn-Lugar needs to be treated consistently as a high priority by the Administration and the Congress, rather than as just another laudable program that receives intermittent attention and some share of discretionary resources.

Third, this is not just a problem with or in Russia. While it is true that in quantitative terms, most of the loose nuke problem is located in Russia, not all of it is. Furthermore, quantity is not an adequate yardstick because nuclear weapons have a quality all their own. Put differently, a little nuclear material can go a long way because even just one nuclear detonation or dirty bomb can ruin your whole day.

Two implications follow. One is that Nunn-Lugar and related programs need to be truly international in scope rather than FSU-centric both in concept and execution. In this regard, the successful effort to remove nuclear fuel from the research reactor in Belgrade was important both in its own right and as a model for similar actions in the future. It also could serve as a model for practical cooperation between the United States and Russia that could pay both nonproliferation and broader political benefits. The other implication is that efforts to deal with the loose nukes problem benefit immensely from being multilateral rather than unilateral. The G-8 Global Partnership, or "10 + 10 over 10," initiative is a good beginning at sharing responsibility for the loose nukes problem (but, as President Bush has proposed, the time has also come to broaden its scope beyond the countries of the former Soviet Union).

Moreover, the benefits of international cooperation obviously extend beyond the loose nukes problem. As the successes of the Proliferation Security Initiative and especially the breakthrough on Libya make clear, it is hard to imagine virtually any aspect of a nuclear nonproliferation policy that would not be more effective if it had the active cooperation of other governments. Indeed, it is easy to imagine many initiatives that could only be successful with such cooperation.

Building Walls Between Nuclear Power and Nuclear Weapons

The final broad proliferation problem that I want to address is the one posed by nuclear power wanna-bes, and the challenge of encouraging safe civilian nuclear power to meet global energy needs while at the same time discouraging any temptation—now or in the future—to use such programs to create a nuclear weapons capability. As I noted above, the supply-demand nexus for civilian nuclear power to meet energy requirements poses intrinsic and serious nuclear proliferation risks. This is neither a new problem nor one that has been only recently identified. But in my opinion, it has not received the attention it warrants, particularly in the context of fashioning a comprehensive and coherent nuclear non-proliferation policy.

Let me be clear, this observation is not intended to be a criticism of, much less an attack on, the Nuclear Non-Proliferation Treaty. There is no silver bullet solution to the nuclear proliferation problem, and the NPT isn't one either. But it also is true that the Treaty is neither ineffective nor obsolete. As my colleagues and I argued in our New York Times December Op-Ed, if we did not have an NPT, we would almost surely want to invent it. At the same time, the Treaty is not sacrosanct. It certainly can be modernized and strengthened. In this respect, I believe that the Additional Protocol can make an important contribution, and I hope that the Senate acts favorably on it.

It likewise would be a mistake to regard the NPT as the last word on international regimes governing civilian nuclear power. Recall that the NPT explicitly allows nations that foreswear nuclear weapons to develop nuclear power for peaceful purposes. Specifically, under the terms of the NPT, non-nuclear weapon state signatories may build and operate nuclear reactors, and they are permitted to produce enriched uranium that fuels the reactors, to store the radioactive spent fuel from those reactors, and to reprocess that spent fuel. The only specific obligations are that the signatories declare these facilities to the International Atomic Energy Agency and allow the Agency to inspect them. (The Additional Protocol should help strengthen the IAEA's ability to exercise this authority.)

As we know, the problem is that this "closed fuel cycle" gives these countries an inherent and virtually inescapable capacity to produce the fissile material required for a nuclear weapon. Facilities used to produce enriched uranium for power reactors also can be used to produce highly enriched uranium—HEU—for weapons. Reprocessing spent fuel yields plutonium that can fashioned into nuclear weapons. As

the cases of North Korea and—presumptively—Iran demonstrate, regimes that intend to violate the Treaty's ban on nuclear weapons can exploit this right to operate a nuclear power plant. While seeming to remain within the terms of the treaty, they can gather all the resources necessary to make nuclear weapons, and can even start to build weapons clandestinely. Then they can abrogate the Treaty and proceed to build a nuclear arsenal in the open.

Serious as this potential may be, the problem is broader than nuclear weapon wanna-bes using the NPT as cover and concealment as they pursue their ambitions. The right to have a closed fuel cycle also provides an attractive vehicle for countries that, for whatever reason, want to create and maintain the option to acquire nuclear weapons at some time in the future. Indeed, even the nuclear power wanna-bes who may not have any present intention or desire to create the option to become a nuclear weapons state nevertheless will have done so if they construct a closed fuel cycle.

In addressing this issue, one pitfall to be avoided is to let nuclear nonproliferation become the enemy of civilian nuclear power. That would be serious mistake on three counts. First, it is a fight that advocates of nuclear nonproliferation could easily lose. Second, nuclear power generation has a potentially important role to play in meeting global energy needs and addressing global warming concerns. We should be trying to develop and exploit that potential rather than cripple it. Third, posing the issue as nuclear nonproliferation versus nuclear power presents a false choice and poses a battle that need not be fought.

Instead, the United States should take the lead in building an international regime alongside the NPT that promotes civilian nuclear power but discourages or prohibits closed nuclear fuel cycles. Such a regime would consist of obligations both on the part of customers for civilian nuclear power and the suppliers of the required capabilities.

The additional obligations of the "customers" are simply stated: in addition to their NPT obligations, the customers would agree not to manufacture, store, or reprocess nuclear fuel. They also would agree to inspections to confirm that they were living up to their undertakings.

Those countries that now sell peaceful nuclear technology in accordance with the NPT would take on both additional positive and negative obligations. First, they would agree to forego the sale or transfer of any equipment or technology designed for the enrichment or reprocessing of nuclear fuel to any country that did not already have a fully operational nuclear fuel cycle. They also would agree to provide technology, equipment, or fuel for nuclear reactors only to those countries that had renounced their right to enrich and reprocess nuclear fuel. Second, these suppliers would guarantee the reliable supply of nuclear fuel and the retrieval of spent fuel at competitive prices to those "customer countries" that agree to this new arrangement.

To enhance the attractiveness of such a bargain and make it all but economically irresistible (as well as help to distinguish between true nuclear power wanna-bes and those who harbor nuclear weapon ambitions), consideration should be given to providing these services not merely at competitive, but at deeply subsidized, prices. In this connection, John Deutch has calculated that such subsidies would be affordable, perhaps on order of 1-2 percent of the annual DOD budget. Moreover, there is every reason to believe that the United States would not have to foot the full bill, not least because those other countries that would be providing nuclear fuel services would have domestic political incentives to subsidize the cost of those services in order remain competitive in the global nuclear fuel industry.

Obviously, these are no more than the broadest outlines of such a regime, one that parallels some of the ideas President Bush presented in his February 11 speech at NDU. A large number of details would have to be filled in, such as the arrangements for an international consortium that would provide guaranteed fuel services at competitive or even subsidized prices (and, if subsidized, how the subsidies would be calculated and who would pay them). There also are a long list of hard questions to be addressed, ranging from how formal or informal such a regime should be, to whether sanctions should be applied to suppliers or customers who do not join in the new arrangements, to how to treat countries like Brazil that have nuclear supplier ambitions, to how to deal with countries like India and Pakistan that have demonstrated nuclear weapons capabilities but are outside the NPT. And even more than in the case of NPT itself, there will be those who will charge—with some justification—that any such international arrangement would be highly "discriminatory."

Even if all of the questions can be answered and the various problems and objections can be overcome, this new international regime would not be a cure-all. But I do believe that it could provide a key building block in a comprehensive nuclear

nonproliferation strategy, while at the same time promoting the development of peaceful nuclear energy. That potential convinces me that an approach along these lines warrants serious consideration. Thank you.

The CHAIRMAN. Thank you very much, Secretary Kanter.

Let me begin the questioning by suggesting that each member might take 10 minutes in the first round.

I want to mention in advance that Secretary Perry wanted to leave our hearing about 11 o'clock. This will give us the opportunity for questioning before he departs. Perhaps we may continue if others might be prepared to stay a bit longer.

In your testimony, very collectively, you have all mentioned the importance not only of international cooperation, but also of something beyond that, perhaps an almost universal sign-up of countries, a truly comprehensive full-court press in this area. I think that is a tremendously important point which I would want to affirm.

I would also mention that we have had success, at least in the Congress, with the non-proliferation legislation being expanded beyond Russia and the New Independent States, far be it that $50 million of the funds could be expended somewhere else. The funds were not increased, but the $50 million is flexible.

It has been suggested in previous hearings that these funds, for example, might be used in Libya. Once again, however, we have run up against problems that are always inherent in the situation. Namely the United States has a number of political and economic sanctions still being enforced against Libya. The funds cannot be used in a country in which we are imposing sanctions.

This gets back to a fundamental problem of the legislation with regard to Russia, for example, because Secretary Kanter has made the point that all of the issues get back to Russia in one form or another. It's cooperation.

Some have found this to be almost counter-intuitive, after the fall of the Soviet Union. It is not counter-intuitive to many Russians who came to visit with the three of you, with Sam Nunn and myself, and with others. This suggests that we had a mutual problem.

This has not ever been completely understood, but hopefully, in the course of our hearings and future legislation, we will understand that we are not dealing here with foreign aid to Russia, or a gift, or some grant. We're involved in a question of mutual security.

From the very beginning, the Nunn-Lugar program was plagued with other stipulations added by well-meaning Members who suggested that money ought not to be available to the Russians if they were not clearly forthcoming with regard to all the information that we required about their weapons of mass destruction, or their facilities, or so forth, or even their reports were incomplete or inaccurate.

Leaving aside why they lied or cheated, there were lots of questions that could not be evaluated, or various other stipulations.

If the Russian responses at any point in history were unsatisfying, the Cooperative Threat Reduction moneys ended, as did services by the technicians and so forth. This is not an aca-

demic issue. In the year just past, we had a period of 6 months in which the whole thing literally stopped.

It may have been an imperative program for national security, but nevertheless the Secretary of State felt that he could not stipulate that each of the conditions that were required had been met. Therefore, there would be no funding, and no extension of the program until that occurred.

That has been redressed eventually by waivers. That is, the President of the United States, and, through him, his Secretaries, have been allowed to proceed, notwithstanding the fact that not all of these stipulations were met.

I would also like to cite a non-nuclear site, namely the chemical program at Schyuchye where there have been hundreds of millions of dollars of United States funds. Funds from other nations have been expended on elimination facilities.

It will be critical, as the program is expanded, to discern whether all of the weapons, 1.9 million different shells of various sizes, all the way up to Scud missiles, and all the way down to 85 millimeter shells, be destroyed. Likewise, we must examine the chemical arms for two others among the seven sites that Russia and the United States are guarding.

There were additional stipulations there. It takes time and effort to get waivers and legislation for waivers, so that the President can proceed there. I would just say, frankly, that we have not succeeded in getting, not even to the President of the United States, a permanent waiver authority. After another year or so, things will run out again at Schyuchye, and we will be back once again examining this project.

We're really talking here about the most fundamental problem of security that our Nation faces. Yet even at this point, 13 years down the trail from the initial legislation, we're still involved with thoughts that somehow the Russians may not always do the right thing. Therefore, we sanction them by cutting off the Cooperative Threat Reduction Program.

I am hopeful that we will all get a better understanding, through these discussions, of how important it is to proceed. Because the Russian relationship has gone up and down a good bit during the 13 years. Mercifully, the Cooperative Threat Reduction Program has survived all of the ups and downs, in large part because Russians, as well as Americans, saw it was imperative to their national security.

The third point that I wanted to make is that we are now in a situation, with the A.Q. Khan revelation that has been mentioned, of an extraordinary breakthrough, in two ways, one of which is that President Qadhafi in Libya has come to a pragmatic decision.

Senator Biden had a visit with Qadhafi just a week ago. He has told some of us about his conversations, in which the Libyan leader had simply come to the conclusion that this was a bad mistake, in terms of foreign policy. And if you made a bad mistake, it's best to get rid of it thoroughly. We're literally carting it out, root and branch, and in a very summary fashion.

We're now allowing Americans to go to Libya, and we are encouraging trade to proceed. Not all of the sanctions have been lifted,

although five by the President in assembly last week. This is a remarkable turnaround.

There is sort of a road map of cooperation of this information. On occasion even materials, including trades for missiles with North Korea, for example, all of these things have come into public view in a way that is startling. All of this proceeded for two decades.

Some of the arsenal was suspected, but not in that amount or degree. Specific countries weren't necessarily named. It is a therefore remarkable opportunity at this stage to followup on each of these reports of actual trades, on reports of human beings selling stuff for money, perhaps with the patriotic motive, perhaps with a profit motive, and perhaps with a combination of this.

All of this leads to some debate in Congress about whether the Cooperative Threat Reduction Program, for example, ought to expand beyond Russia. We decided that in a way, but only barely. There is still genuine ongoing debate.

Some of our colleagues in the Armed Services Committee say that, after all, this is money that is subtracted from the Defense Department for other objectives. The Department might want to undertake weapons systems, for example, or increase pay to the troops.

Some would argue that it should not be the Department of Defense bearing this, but rather that the State Department ought to do it. They say that this is a matter of diplomacy. Already the Department of Energy is heavily invested. Their investment is at least the equivalent of that of the Department of Defense, and maybe in some cases more. Furthermore, we have now added all of this together, and, although the Department of Defense's part may be $450 million more or less each year, over a billion dollars in these programs collectively is the figure that we state to the other members of the G-8, in the so-called 10 + 10 over 10 program. We are encouraging them to match at least a billion dollars that we're putting in for 10 years, but this goes very slowly.

The urgency there has not quite been felt. If you were to draw up a chart of 10 years and ask how much anybody would deposit in this period of time, the fill-ins just don't occur. Less than half of the $10 billion can be seen, I think.

What should the priorities be? What amount of money should be spent in each of these 10 years? It is very, very difficult to get answers to this. Clearly, heavy diplomacy on our part and that of others will be required. There are frameworks out there to achieve some of the objectives that we are talking about today. At the same time, one purpose of this hearing is to bring a much greater sense of urgency to our administration, to the G-8 members, to the Russians and to the Duma in particular. Right now we're holding up the liability treaties that are required by European friends who want to become involved. We are pleased that they can become involved.

This is going to require insistent drum-beating all of the time, I suspect. This is why I go through the tedium of it presently. You have all been involved in it, too. You were on the battle lines in the administration, in academia, and both, coming and going.

I am enthusiastic about the program that you have illustrated. This has enhanced the practical political measures that have to ac-

company that. Public opinion might be seized with this, perhaps in a different way, perhaps in a way in which the urgency is felt by people in this country who truly are worried about the war against terrorism.

I am deeply worried when you express the thought that a 9/11 highjackers, instead of having a guided missile, going into the World Trade Center, might have had a 12 kiloton nuclear weapon. In that case, the circles of devastation and death, along with the end of New York City, come into view. That is a different problem. That is what Secretary Perry commenced with.

Let me cease-fire for a moment and recognize my colleague, Senator Nelson.

Senator NELSON. Thank you, Mr. Chairman.

In the President's budget, there is a $41 million cut in the Department of Defense account Cooperative Threat Reduction Program. Why shouldn't we be raising Cain with the cut?

Mr. PERRY. I have a simple answer to that question, Senator Nelson.

I believe I stated in my testimony that I believe we have an overriding priority to stop nuclear proliferation, an overriding priority. And that is not consistent with cutting the Cooperative Threat Reduction Program, and I am in favor of increasing and not cutting.

Senator NELSON. Well, I'm going to raise some Cain. And I am going to do it this afternoon on the budget that's on the floor. I don't expect to win it because they have got this thing in a financial straightjacket where you have to take if from someplace else. But I am sure going to do it.

Mr. PERRY. Let me say one other thing.

Senator NELSON. Just to keep the issue visible.

Mr. PERRY. When I was the Secretary of Defense, I was continually frustrated by attempts to treat the Nunn-Lugar program as foreign aid. And one of the ways that I used in dealing with that frustration is I referred to it continually as defense by other means. It is a defense program. It is for the national security of the country. It is not to help other countries. And I think put in that context, it gets you a better basis for dealing with the issue.

I can not think of any other program that has a higher priority in terms of really protecting the security of Americans than these programs.

Mr. KANTER. Senator Nelson, if you think that your exercise this afternoon is going to be an exercise of tilting at windmills, let me suggest another windmill at which to tilt.

It is the way in which the Congress deals with the overall budget problem, and in particular, distinguishing between the 050 account and the 150 account, as though somehow real national security gets budgeted as 050 and that other stuff is budgeted as 150. And, fights about whether the State Department ought to be paying, or whether this is taking money away from Defense programs, and so forth.

In some respects, these fights have their root in the way in which the problem is defined. And I think removing a line which certainly in the post-cold war world and absolutely in post-9/11 world, makes no sense whatsoever would be one way to help properly frame the debate in terms of the tradeoffs that inevitably have to be made.

Senator NELSON. Interestingly, when the budget act was enacted back in the 1970s, it had as it purpose to try to bring some financial discipline to stop the hemorrhage of deficit financing. The whole budget act is being used for other proposes, and the one of which you have just indicated is a good example. That is in my judgment, and obviously yours and it's not in the best interest of the country.

Let me ask you, why shouldn't it be the policy of the U.S. Government to be leaning on Pakistan right now, President Musharraf, to get Dr. Khan to come clean with who all he has proliferated.

Mr. KANTER. My impression, which may well be mistaken, is that is the policy of the U.S. Government. I would distinguish between the question of whether A.Q. Khan should be thrown into jail and throw away the key, that he should be punished, and the question of can we find out as much as possible about what he and his associates have been doing for the last 20 years? And, can we be as confident as possible that we have not just disrupted, but destroyed, the network?

I think that putting Mr. Khan in jail or whatever might be therapeutic, but it doesn't go to the issue. Where we ought to be concentrating is on the latter problem, and frankly my impression is that is the U.S. priority.

Senator NELSON. Well we know, for example, about North Korea and Libya. But we don't know if he sent some material and information to al-Qaeda, and that takes it to another whole level. What do you think, Dr. Carter?

Mr. CARTER. Well, I can only hope that part of the deal that Musharraf made with A.Q. Khan, that keeps A.Q. Khan out of jail is that he has to come completely clean with all of his transactions to include especially and I think you asked a very good question, did he confine his activities to foreign states or were there nonstate partners to this trade. And we know that in his entourage there were those who sympathized with the Taliban, and with al-Qaeda. And therefore there is every reason to believe that people who are willing to trade with North Korea might well have been even more willing to trade with al-Qaeda.

I don't know the details of the arrangement that Musharraf made with A.Q. Khan, nor the details of any arrangement if we have one with Musharraf about the treatment of A.Q. Khan. But it seems to me that we need to get to the bottom of particularly the question you just raised.

May I add one more thing to your query about the funding as well, and this gets back to Senator Lugar's point about the Nunn-Lugar program.

This diminution in the funding is, to me, just one more symptom of the problem that both of you were pointing out, which is that Nunn-Lugar is spoken fondly of, but not really pro-actively managed. I should say, parenthetically that this has been true for some time, and it is a statement in my judgment not purely about the current administration. I had the same beef, actually going back in time.

And it has a couple of results. One is the pernicious results. One is the one that Senator Lugar pointed to earlier that we're constantly reacting to these problems. We find ourselves unable to cer-

tify. The legislation has been on the books for a decade. How can you discover that you can't certify all of a sudden, and then spend 6 months trying to dig yourself out of a hole? How can that happen 10 years into a program?

And to me that signifies the fact the there is not that top level managerial attention that's looking for opportunities. What could we do with a Nunn-Lugar, this novel approach, for disarmament in Libya? In North Korea? Where are the program designs? Why isn't this budgeted? Why do we let ourselves be blind-sided by what the Russians are doing? And yes, there's fault on their side, but it's our security. We need to anticipate that, and work against it.

So I was really pleased to see what the President had to say in his National Defense University speech, which is Nunn-Lugar is great. But, to me there has to be not just more money, but there has to be managerial attention. I was lucky enough to work for Bill Perry, and I never had to worry that there was support at the top for Nunn-Lugar in Defense.

But I think that without that support at the top, we're playing a nibbling game on a problem that's huge and while we're nibbling, it's going to bite us, and you know where, one of these days. So I would like to see speeches followed through on with money and management attention. Otherwise, there is just talk.

Senator NELSON. Well, I'm going to give the Senate a chance to go on the record today on that subject.

Final question, Mr. Chairman.

What would be your instructions to us regarding what we could learn about what changed Qadhafi's mind, so that we could go and encourage the leadership in Iran and North Korea?

Mr. KANTER. It strikes me that Libya is a potentially fruitful case study, because, one, there apparently has been an important breakthrough, so it is a kind of model success.

Two, it seems to have some distinct elements that worked in combination, or appeared to have worked in combination, that look as though they are generalizable.

One is that there appears to have been a serious and ultimately successful effort to frustrate Qadhafi's weapons of mass destruction ambitions. We just made it really hard for him to succeed.

Now, there are some folks out there who were taking his money and not delivering the goods, who also frustrating him. But I think there was a very active program to make clear to him that he was never going to get there. That was one element.

The second element was that we really showed him that as long as he stuck at it he was going to pay a terrible price. But, if he turned around, not only would there be an absence of bads, but there would be a presence of goods. Good things would begin to happen, and he could really achieve his broader agenda. And we would actively help him do that. So this combination of positive and negative incentives, sanctions and incentives.

Third, I think it is a real model of international cooperation. This was by no stretch of the imagination a U.S. only operation, and as far as I can understand it could have never have succeeded if we had tried to do it on our own.

There were lots of countries that participated, each in ways that were distinctive if not unique. And it was the coming together of all of those efforts that made this possible.

So, it strikes me that there is a model here that ought to be validated, and if it is validated, can be applied to other countries. And my first candidate out of the box is Iran.

The CHAIRMAN. Thank you very much, Senator Nelson.

Senator Alexander.

Senator ALEXANDER. Thank you, Mr. Chairman.

Thank you for your testimony. Picking up on your comment on Iran and Senator Lugar's comment about stipulations, the three of you in your article suggested that we work with a country that we had reason not to trust to permit them to move ahead with nuclear powerplants in exchange for certain inspections.

To avoid the problem we have with Nunn-Lugar, in terms of the wrong kinds of stipulations and controls over a person who we formerly had reason not to trust, what kind of stipulations and controls should we have under your plan to satisfy our need for inspection?

Mr. CARTER. I'll take that. I think the case in which you're referring to is Iran.

Senator ALEXANDER. Did I not say Iran?

Mr. CARTER. I'm sorry. I'm sorry. But——

Senator ALEXANDER. That's your New York Times article on Iran——

Mr. CARTER [continuing]. Yes, and I understand.

Senator ALEXANDER [continuing]. Where the nuclear powerplants and the idea of reprocessed fuel. What should we require?

Mr. CARTER. Our op-ed argued that Iran should not have reprocessing and enrichment facilities, inspected or non-inspected. That constituted essentially a bomb program.

Senator ALEXANDER. Right.

Mr. CARTER. And that wasn't OK.

Senator ALEXANDER. But you've given them the fuel? In exchange for what?

Mr. CARTER. If they build a reactor.

Senator ALEXANDER. Yes.

Mr. CARTER. Then you give them fuel, one batch at a time.

Senator ALEXANDER. Yes.

Mr. CARTER. They irradiate the fuel and you expatriate the fuel.

Senator ALEXANDER. OK.

Mr. CARTER. They're dependent upon outside suppliers for enrichment, so they are not doing enrichment themselves, and thereby bringing themselves closer to a uranium bomb. Nor are they reprocessing spent fuel, obtaining plutonium and bringing themselves close to a plutonium bomb.

I suppose that if we trusted the Iranians more, we would accept an inspected enrichment and reprocessing program. We do that with Japan, happily. We do that with the United Kingdom, happily.

Senator ALEXANDER. Yes.

Mr. CARTER. We even do that with Russia, happily. But we're not prepared to do that with Iran, and that's why our proposal called for Iran to not have any of those things.

Likewise, in North Korea, by the way, Yong Byon is on the surface of it, a perfectly OK facility under the NPT. All they're doing is running reactors and reprocessing plutonium, and nothing is wrong. The North Koreans used to say this. I remember very distinctly them saying how come the Japanese can do it, and we can't? And the answer is, you're the North Koreans, and they're the Japanese. That's the only answer. So we don't trust those parties to do reprocessing or enrichment at all.

Senator ALEXANDER. So under your plan the only scheme we would need really is we give you the fuel and we retrieve the spent fuel, and no other requirement is needed?

Mr. CARTER. If we are able, batch by batch to remove irradiated fuel, then the worst that can happen is that they can break their agreement.

Senator ALEXANDER. Yes.

Mr. CARTER. And hold on to one batch of one fuel, which would contain reactor grade plutonium, and not weapons grade plutonium, which is some comfort. And, which would give them, if they kept it, a capacity for a small number of nuclear weapons, but we would immediately know what they were up to, and they would be immediately in breach of their international obligations.

And that's a far preferable circumstance to one in which they build their own enrichment and reprocessing facilities, operate them at any scale all by themselves. Accumulate uranium, accumulate plutonium, then you're in a position where any day they can kick the inspectors out and they have a whole lot. This is a far better situation.

Mr. PERRY. Senator Alexander, I would add one other point to that. I agree completely with what Dr. Carter has said, but we also have to have some provisions to accommodate the possibility that they might have a covert program, somewhere, and that calls for unannounced inspections. So we need an inspection protocol as well as the agreement that Dr. Carter was describing.

Senator ALEXANDER. So those two things together?

Mr. PERRY. If I can, I want to emphasize the fact that it is very difficult to get agreements for that.

Senator ALEXANDER. Yes.

Mr. PERRY. And the negotiations with Iran to date are not close to having reached those agreements.

Mr. KANTER. May I add one more statement?

Senator ALEXANDER. Sure.

Mr. PERRY. I'm sorry, but there is one further stipulation that is very important, and Senator Lugar raised this as well, which is whether participation in the NPT, in this expanded way, should be mandatory or not. Or whether because right now we regard the NPT as something that sovereign nations accede to if they wish to. And can withdraw from when they wish to.

Senator ALEXANDER. Yes.

Mr. PERRY. And I think that Senator Lugar was pointing to a world in which membership in the NPT was required or strongly expected, and brought you under deep suspicion if you were not a member, and in which withdrawal was not an option. Do you remember the roach motels, "you can check in but you can't check

out." I'm talking about the kind of NPT, where you can join but you can't withdraw or leave. I think that ought to be part of our future.

Mr. KANTER. Senator.

Two points. One is that the scheme we have in mind is two-sided. That is, it not only would ask in the case of Iran, that Iran forego enrichment and reprocessing, but it would also try to construct an international suppliers' agreement so that Iran could not get the technology and equipment that it needs to enrich or reprocess fuel, even if it tried.

So that it is a combination of getting the would be customer to say, "I'm out of that business," or that "I am not going to get into that business," and suppliers to say, "We're not going to sell you that stuff." So it really does try to close it down.

The other point that I would make is that what we're suggesting doesn't try to go case by case and say that's a trustworthy country, that's an untrustworthy country, and so forth. It just tries to delegitimize any and all new countries getting into the closed fuel cycle business.

And it does that for two reasons. One, is it helps to avoid the need to decide who you can trust and what it takes to trust them.

And the other reason is that any country with a closed nuclear fuel cycle can decide tomorrow that it is no longer going to be a part of the NPT and can start using all of that stuff to build nuclear weapons. It has a breakout capacity.

So we want to minimize the risks of breakout as well as minimize the risks of cheating.

Senator ALEXANDER. So there are three things from our point of view. You've said that one would be the alliance of supplier countries?

Mr. PERRY. Yes.

Mr. KANTER. Yes.

Mr. CARTER. Yes.

Senator ALEXANDER. Two would be, we give you the fuel and you give us back the spent fuel.

Mr. PERRY. Yes.

Senator ALEXANDER. And three would be some inspection?

Mr. KANTER. Yes.

Senator ALEXANDER. So those would be the three.

You mentioned North Korea. Are we making progress, Dr. Carter, in North Korea, or are they just busy making, processing nuclear fuel while we're talking?

Mr. CARTER. I'm concerned that they're making progress, and compared to where we were 2 years ago, where 8,000 fuel rods were at Yong Byon, where they could be inspected or bombed, we now don't know where they are. And we don't know in what condition. That's a deterioration of our position while we have considered our own strategy. So I think our options have narrowed and our situation has deteriorated.

I wouldn't be candid if I didn't say that I have a concern that we have a divided government on this matter. From the outside looking in. So, it seems to me.

And, we don't have a clear strategy to approach the North Koreans, and it would be bad enough if only we saw that, but I think

the North Koreans see that also. And to approach them with mixed signals is dangerous business in the case of the North Koreans.

And if I can add one other thing to what Senator Nelson raised about models, and Libya being a model and so forth. My own take on that is what we see in these are not models. What we see is the tremendous variety.

Let's take Saddam Hussein. We need a new word for Saddam Hussein. He is not a rogue, because a rogue is somebody who is up to more than what he lets on. I don't know what you would call somebody who is up to less than what he lets on. But that was Saddam Hussein.

Muammar Qadhafi has zigged and zagged so many times that I would be reluctant to generalize from his mentality.

Kim Jong Il's mentality I don't profess to understand, though I have studied it quite a bit.

And we have other cases like the Ukraine in which the Nunn-Lugar program was central in that case in convincing that government that it was safe for them to take the path we wanted. It involved security assurances, it involved visits by our then Secretary of Defense to them to create the vision for their people that it was safe to be without nuclear weapons. It required concrete assistance under the Nunn-Lugar program to help them get the job done.

So all of these cases are different. And therefore I loathe to generalize.

And in Iran, yet different also. What it seems to me it teaches you is that you have got to get in there and see what they're up to, and work the problem.

And we're not working the problem with the North Koreans. We don't have to reach agreement with the North Koreans, but I would like to have a faster pace of exploring the proposition that they can be talked out of nuclear weapons. I'm not sure they can be.

But as the years drag on, I still don't know the answer to that question. But meanwhile they're taking steps toward reprocessing plutonium. That's not progress, in my judgment, and that's how I would answer your question.

The CHAIRMAN. Thank you very much. Secretary Perry, I know that you may need to depart, and we thank you very much. I wanted to take advantage of the other two witnesses, and to raise another question or two. You're excused whenever you need to leave. We appreciate that.

Mr. PERRY. I'll let you ask your question and I'll answer that and then I will be on my way.

The CHAIRMAN. Very well.

I want to think aloud with you about this proposition that collectively the world knows which countries, which nation-states currently have nuclear weapons. I believe that we probably know which nations have some fissile material, which may not be fully weaponized. Some elements and programs may be in various stages.

I'm not certain that is the case, but I think that might be the case. I just wanted to test out for size with you experts whether the parameters of the problem could be known. The Nuclear Threat Initiative group has laboratories in diverse states, which are sometimes numbered at 23 or 24. They had programs in which Russia

and United States at various times sent some elements of nuclear fuel for humanitarian proposes.

Some of this has been retrieved, in a couple of cases, maybe three. Most of it has not been. Frequently that therefore increases the number of places, in terms of the proliferation issue, in which someone might secure something, such as spent fuel, or whatever may be there.

The reason that I ask this is that it seems to me that as opposed to our waving our hands over the whole horizon, one way of approaching the subject is with some very specific lists of cases and countries, and then some program ready for narrowing the field.

In other words, if we're serious about the 23 or so, maybe not all will be instantly cooperative in giving up their material, whatever it is, even if its programs are dormant. We need to know that there is a supposition that there is something out there. Some countries are cooperative and some countries are not.

It is going to cost something to do that, and we need to think internationally with other countries, in this comprehensive way that we are discussing the issue today, as to what kind of fund we should create to do this.

We must also get into the tougher cases that we have been talking about, namely situations that clearly have programs that are, if not entirely active, as in the case of North Korea, are verging on active, as in the case of Iran. Some nations are sort of sitting in a group by themselves, requiring very heavy lifting diplomatically, in a multilateral way, for whatever we want to do.

Secretary Carter has mentioned the material in Great Britain, and France and what have you. That may be benign in a sense. These are responsible parties, and hopefully, already a part of our group. It is essential that Russia be a part of the group. We are approaching this together, but exclusive of the U.S. and Russia, we must welcome a broader group of countries.

The world understands the narrowing-down process. The real focus therefore should be on determining where the dilemmas are, and what the procedures are going to be, if we're serious about safety. The British are very serious about safety, as are the French. The Russians who have demonstrated that. This doesn't rely upon foreign aid or a gift or what have you.

As a matter of fact, the urgency, the focus of we're talking about comes from the thought that we're all in a war against terrorism. The worst aspects of this may very well be that non-nation states, due to dereliction of duty by any of the aforementioned, get the material. It is in our best interest, we believe, to do this.

Some states may want to exempt themselves from this. The North Koreans may say that they are not prepared to sign up yet, but by doing so they would become the exceptions. It is very clear.

I have a feeling that this problem is so diffuse, now, that a lot of the signals can be ignored. Somebody mentioned that from time to time there might be some fissile material, perhaps at the Devenko Laboratory in Belgrade a short time ago. Someone said, who cares. That's a long time ago. And they have got a problem, and they want some money to clean it up, and so forth. We may have dismissed this situation because some professed that it may or may not have been a big deal. We need to define this dilemma.

I am just thinking aloud with the three of you as to whether programmatically, leaving aside whether we have legislation or whether this is an amendment of Nunn-Lugar or whatever else you want to call it, we should advise our own government to begin doing this and to try to exercise some leadership in all of the fora that we have at our disposal, whether it be this committee, or op-ed articles, or the institutions that you serve—to begin to bring this to a head in this way.

Do any of you have any comments?

Yes, Secretary Perry.

Mr. PERRY. Mr. Chairman, I'm going to defer to my colleagues to give a detailed answer to that question. But before I do, I want to associate myself with the importance of the question you raised. And with the belief that we do need substantial expansion.

And I would think the first step in this would be an expansion of the Nunn-Lugar program, as the most obvious and most effective vehicle for dealing with the issue.

Thank you.

The CHAIRMAN. Thank you very much.

Secretary Carter.

Mr. CARTER. Thank you, Mr. Chairman.

I also very much resonate with what you just said. And let me just restate it, and draw the same conclusion you did.

We don't know who has fissile material, but we do know who has made fissile material. And it's almost surely true, and I don't know anybody who believes the contrary, but at this point in history, only governments have made the wherewithal of nuclear weapons.

Now one can't say that about biological weapons. But nuclear weapons which is the thing we have most to fear, can only be made out of plutonium or enriched uranium, and only governments have made that. And that means that, in principal, we can, by getting those governments to act properly and to treat every bit of fissile material as though it was an assembled bomb, we can contain the problem of nuclear proliferation and nuclear terrorism.

And, in principal one can write down the location of every gram of highly enriched uranium and plutonium as you indicated. And make a list of places where they are. And make a plan to make sure that all of that material is treated as though it were a bomb that could fall into the hands of al-Qaeda.

That is entirely within the ken of man to do, and a program manager who had the mandate to do so. And you're absolutely right, not everybody would be willing to enter that program now. North Korea wouldn't now, but I hope that sometime in the future they will.

A year ago, we wouldn't believe that Libya would have been willing to enter that program. Thirteen years ago, or 12 years ago when you began the Nunn-Lugar program, we wouldn't believe that Ukraine and Belarus would have been prepared to do that.

So, the bad news about nuclear weapons is once they go off you can't take Cipro. It is too late. The good news about nuclear weapons is that they can only be made out of high-enriched uranium or plutonium and that is locatable, definable material. And what we should be going about is systematically identifying the location of every gram of this stuff and making sure that each and every gram

is treated as though it was a bomb in al-Qaeda, potentially in the hands of al-Qaeda.

The CHAIRMAN. I believe that's a very important statement. Every gram was produced by some known government which may or may not be cooperative.

Nevertheless, what I wanted to do is take this out of the era of hopelessness, the feeling that somehow you just have to hope historically that nothing will happen because we really have no way of knowing. In fact we do have ways of knowing.

By narrowing the focus of who we raise the questions with, it becomes a management problem, a very severe one. Having names like North Korea on the roster doesn't mean that you have solved the management problem. It is not 27 different places. You have finally narrowed the focus. Probably you have also changed the dynamics of the debate that we have on Nunn-Lugar or other programs.

For example, the Nunn-Lugar program is, say, $400 or $450 million—whatever it is. This is like a long-range program for building college dormitories at an expanding university. There is no particular urgency, the place is growing, so you build on about every year. It goes on and on, and there is a feeling that you may not solve the problem completely that year, but you're still making headway. It is not a life and death matter, ultimately, anyway.

So you do some good, $450 million worth, wherever it may lie at that particular time, without the thought that you got your arms around the whole problem. It seems to me that once our country and the world has some idea of what specifically the problem is, and the degree of difficulty, then we will deal differently in terms of budget.

For example, let's take the debate that we have had on the $87 billion of supplemental funds for Iraq and Afghanistan. The country made a decision, first of all, that we wanted to pay our Armed Forces. We acknowledged that that would be expensive, and that we would need to do that. But beyond that, about $18 billion are for reconstruction of the country. This exceeds, by a multiple, any foreign assistance that we have ever done for any country, collectively, and in some cases for the whole lot in any one year.

Now we are seized with the problem of managing this. As you follow the play by play of who is handling a state's defense, and in what sequence, and so forth, it is a lot of money. And yet, the thought was that this is a definable problem. Iraq must be successful as an economy, as a democracy, as a model.

Seized with the problem, we have tried to allocate the resources. This is why I have tried to become more particular. I share the thoughts of all three of you. We may have not been seized with the priority.

On the other hand, while the situation may remain hopelessly vague, you can always make a case that we're doing some good. As a matter of fact, the Russians are sometimes not very cooperative. I didn't want to get into discussion with Senator Nelson on that specific point, but that is one reason why it is $405 million this year as opposed to $450 million. In some cases, the Russians have said that is about as far as they want to go in this particular business.

Maybe we might have pushed harder. Clearly, there are always more warheads to be taken off missiles, and more missiles to be destroyed. We're sort of at our own pace right now. There is a comfort level about this. Nonetheless, it becomes so regularized. Maybe there needs to be some urgency in the process.

Secretary Kanter, listening to all of this, what do you have to say?

Mr. KANTER. Amen.

I would just add the following points.

First, I would certainly associate myself with the idea that we need to have a much clearer sense of urgency and priority. That, in turn, I would hope would help deal with the various obstacles that are constantly encountered on an annual basis that get in the way. And it would provide a political basis for essentially, say in the case of Libya, providing the President with blanket authority to waive all sanctions as required to implement Nunn-Lugar for Libya.

And there might even be some kind of symbiotic relationship in that kind of proposal, because if such a proposal could be adopted, that would help focus a sense of urgency and sense of priority on the problem both in Libya and overall.

I would add a couple of other points. One is that there is a lot more to do than we can do, and so not knowing what we don't know is not a big problem right now.

But, sooner or later we're going to discover in the case of North Korea, we don't know. Our ability to find HEU production is far different and far more limited than it is the case of plutonium. And so, that is a real problem trying to understand the scope of the problem.

That second point I would make is that we want to make clear the problem is bounded and therefore manageable, if difficult. But we also want to keep the problem bounded by adopting some prophylactic measures, perhaps along the lines we proposed in our oped, to significantly reduce the risk that the list of countries or actors that we're worried about grows.

And so we really do want to do both. Have a prophylactic component as well as this kind of remedial component. And I understand the trick is to avoid letting one become the enemy of the other, or competing with the other. I understand that is tough, politically, as well as analytically.

But I do think that we need to do both.

The CHAIRMAN. I thank both of you very much for your statements, and the research that has accompanied them as well as the articles that you have cited. We appreciate your coming this morning and making these contributions.

We will all proceed together in whatever capacities we have, because the work is extremely important.

If either of you have further comments, we will hear that. Otherwise, we will bring the hearing to a close.

Mr. CARTER. Only to thank you for having me here. I appreciate it for setting this agenda for all of us. Thank you for this opportunity, and thank you for what you're doing.

Mr. KANTER. Thank you.

The CHAIRMAN. Thank you.

The hearing is adjourned.

[Whereupon at 11:25 a.m. the committee adjourned, to reconvene subject to the call of the Chair.]

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